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PROCEEDINGS

OF THE

...rnational Sanitary Conference

OPENED AT CONSTANTINOPLE

On the 13th February 1866.

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PROCEEDINGS

OF THE

INTERNATIONAL SANITARY CONFERENCE

OPENED AT CONSTANTINOPLE

On the 13th February 1866.

No. 62, dated 16th July 1866.

From—Her Majesty's Secretary of State for India,
To—The Government of India, HOME DEPT. *(Public)*

I forward herewith for your information, and for such publicity as you may consider necessary, six copies of conclusions arrived at by the British Cholera Commissioners upon the most important points relating to the propagation of the disease.

No 21, dated 25th May 1866.

From—The British Cholera Commissioners,
To—The EARL OF CLARENDON.

In our Despatch No. 20 of the 22nd instant, we informed your Lordship that the "Commission Plénière" of the Cholera Conference, appointed to report upon the first and second groups of the programme, had finished their labors, and that their Report would be submitted to the Conference immediately after being printed.

We should have deferred any further notice of the above-mentioned Report until the Conference had decided upon it; but as we have observed in the public prints just received that England is threatened with an invasion of Cholera from neighbouring Continental ports, and that some difference of opinion appears to exist as to the measures to be adopted, we think the emergency justifies us in departing from the ordinary course, and in forwarding at once to your Lordship the conclusions of the "Commission Plénière" bearing upon the most important points of the propagation of the disease.

We may observe that the "Commission" whose conclusions are embodied herein is composed of three of the diplomatic and of all the medical delegates, comprising altogether twenty-four out of the thirty-six

members of the Conference, and that with the exception of one medical delegate, who was absent on duty during the latter half of the discussions, the sense of the conclusions numbered 1 to 6 was unanimously adopted. We have reason to believe that the absent delegate would have voted with the rest of his colleagues. On the 7th there was some difference of opinion.

The conclusions comprise the following points:—

1.—That Cholera is communicable from the diseased to the healthy.

2.—That it may be communicated—

(a). By persons in the state of developed cholera;

(b). By persons suffering from Choleraic diarrhœa, who can move about, and who are apparently in health for some days during the progress of the disease.

These last, from their passing unquestioned and unsuspected, are the most dangerous to the communities amongst whom they may move.

3. That the discharges of those in a state of developed Cholera, or in a state of choleraic diarrhœa, become the chief means by which the Cholera poison escapes from the system, and by mingling with air or water diffuses the disease.

4. That Cholera may be transmitted by exposures of persons to the atmosphere of buildings, places, or vessels which have been occupied by Cholera patients, and to the emanations from clothes, bedding, or other articles which have been in contact with diseased individuals, or which may have become soiled by their discharges.

5. That when infected articles or places are shut up and excluded from free air, they preserve their dangerous qualities for an indefinite length of time, and, on the other hand, the freer the exposure to ventilation, the more rapidly they become innocuous.

6. That there is no reason to suppose that Cholera is communicable by actual contact between individuals.

7. That the period of incubation, counting from the time of the reception of the poison to its manifestation in some form or other, is short. That the disease may show itself in two ways,—*first*, by inducing fully developed Cholera decidedly and rapidly; *secondly*, by producing slight disturbances, among which diarrhœa may be considered the chief, and which may sooner or later pass into some more or less decided choleraic manifestation. The "Commission" consider that the incubation in the acute form is generally rapid, and that it seldom or never extends beyond a few days from the moment of infection. There was some difference of opinion as to the duration of choleraic diarrhœa, and as to the time that it may continue to be infectious, the great majority of the Commission considering that persons with diarrhœa which has lasted eight full days from the commencement of the period of observation, without showing any indications of a choleraic nature, may be excluded from the class of Cholera patients. The minority think that the choleraic and infectious diarrhœa may last for several weeks.

In mentioning the views of the Commission upon some of the most important points in the history of Cholera, we beg to lay before your Lordship our own opinion of their practical bearing. We have little doubt that the Conference will recommend measures of restriction of intercourse between the sick and the healthy; but as it has not yet entered upon the measures to be taken, we must be considered as representing our own views only in stating that we believe that it logically follows from the above conclusions that if we wish to prevent the spread of Cholera, or its introduction into places free from it, measures should be taken to restrain communication between those suffering from Cholera and the healthy.

Examples taken from the history of the present epidemic most strongly support the opinion of the great advantage of such measures. We may mention that Sicily and Greece completely escaped the disease which was raging around them in 1865. Sicily entirely cut herself off from all communication with diseased places. Greece caused all arrivals from infected localities to perform severe quarantine at four islands—Delos, Pondiconyssi (Salamis), Skiathos, and Vido—and held no intercourse with infected places.

The good results of isolation in the cases of Sicily and Greece are hardly negatived by the examples of what occurred in other places said to be invaded in spite of restrictive measures. The quarantines enforced at Marseilles and some other ports of the Mediterranean were ineffective, either from their incompleteness or from their having been established too late, that is, after direct communication with infected ports had taken place.

It seems to us that in the case of ships or passengers arriving from infected neighbouring ports, the following measures might advantageously be adopted :—

1.—No persons should be allowed to land previous to efficient inspection by medical men appointed for the duty.

2.—The healthy passengers should be removed from the ship, and isolated for a period which need not exceed five days, at the end of which time they should be again inspected, and if found without choleraic symptoms, should receive pratique.

3.—All persons with cholera or diarrhœa at the time of arrival, or at any period of the detention, should be isolated from the rest, and removed to a separate place. Cases of diarrhœa should be retained under observation until the diarrhœa is cured, or until the medical officer in charge is satisfied, from the features of the disease, that it is not of choleraic nature.

We think that the time of observation in such cases of diarrhœa should not be less than eight days from the commencement of seclusion.

Persons having a medical certificate of being sufferers from chronic or symptomatic diarrhœa should follow the rule of the healthy, subject, however, to the discretion of the medical officer in charge.

As the time occupied in the voyage between England and the neighbouring ports is short, we have not included it in the period of observation.

We further think that the complete disinfection of the effects of persons coming from contaminated places should be insisted on, and that the period of isolation of the persons should be from the time that they are separated from their suspected property.

All persons (including medical officers) employed in the Quarantine Department who in any way come in contact with the ships, passengers, crews, or effects that have arrived from contaminated places, should follow the same rules as the arrivals themselves.

With respect to persons detained in the sick departments of the quarantine stations, the destruction or disinfection of all articles used by them should be imperative.

The application of chemical disinfectants to the discharges, the disposal of these below the surface of the soil, if on shore, and beyond the possibility of contaminating water used for drinking purposes, are indispensable.

The above measures would require the following conditions at each quarantine station :—

1.—An establishment for the reception of the healthy, capable of completely isolating successive parties of arrivals in distinct classes, well separated from each other.

2.—An establishment for the reception of the sick, with an isolated convalescent establishment.

Each of the above should be provided with latrines, having moveable receptacles, which should be daily emptied and purified.

3.—An establishment for the purification of effects.

The establishments required would certainly be large, but a small number of them placed on a few points of the coast would suffice if all ships carrying passengers from infected ports were made to pass through them before receiving free pratique.

We consider that islands lying at some distance from the coast would be the most desirable spots for the institution of quarantine stations. On these, wooden—or, still better, iron—constructions might be rapidly raised. In summer weather isolated camps with tents might be formed.

In the event of islands not being available, it would be well to select some place on shore capable of complete isolation, and at a considerable distance from any inhabited quarter, or hulks moored at some distance from the land, but never within rivers. It will be obvious that several ships at each station would be necessary for the efficient working, of the plans proposed.

The principle of isolation, adapted to special circumstances, should, we think, be carried out within the country when the disease has found a footing on shore.

We cannot too strongly urge the necessity of excluding from workhouses and general hospitals any forms of choleraic disease.

The sick poor should be cared for in special and isolated institutions.

We have based the suggestions which we have taken the liberty of submitting to your Lordship upon the supposition that all the agents employed shall be of an intelligent and upright class; that they shall be specially instructed to watch attentively and without exciting their suspicion the persons placed under observation, and report to the medical officers every visit made by any one to the latrines. Without the aid of intelligent and trustworthy agents, it would hardly be possible to limit safely the period of observation to so short a time as above stated.

While convinced that all personal effects should be thoroughly disinfected, we do not think it necessary to extend the measure to mails or to ordinary merchandize.

At this distance we forbear to enter into the question of the possibility of practically enforcing the foregoing measures for general passengers in the narrow seas, though, if applied, we do not doubt of their advantage in a medical point of view. We feel confident, however, that they could be readily carried out in the cases of masses of persons, as in those of the German emigrants who conveyed the disease from Rotterdam to Liverpool.

We also abstain from entering into special details upon measures of restriction and matters of general hygiene, which we consider are none the less called for, because we hold the disease to be capable of transmission.

We therefore limit ourselves to repeating generally that, whatever other important measures are taken, among the most essential should be reckoned, at all times and in all places, those which recognize the possible communicability of the disease; the necessity of complete isolation of all choleraic patients from healthy individuals; the destruction or disinfection of all wearing apparel that may have been in any way contaminated by the sick; the complete disinfection, by chemical means, of all discharges derived from them; the evacuation, if possible, of contaminated ships and habitations of all kinds, and their complete purification.

We beg to observe that, while recognizing the communicability of cholera, we consider that, with due precautions as to ventilation, scrupulous cleanliness, and attention to the disposal of the clothes and other effects, and of the discharges of the sick, the patients can be handled without undue risk to those employed, and that therefore nursing in cholera is less dangerous than in some other contagious diseases.

We are well aware that measures similar in character to those which we suggest have already been recommended by Dr. Budd and others. We do not, therefore, present them as new; but having had the honor of being appointed by your Lordship to attend the Cholera Conferences, the main object of which is to prevent the spread of the disease, and having been obliged by the nature of our duties here to direct special attention to all that relates to it, we hope that we shall not be considered as going

beyond our province if, in this actual crisis, we add our voices to those who advocate restrictive measures, and state our conviction that these would be most effective in their result if employed early with vigour and completeness.

No. 78, dated 14th September, 1866.

From—Her Majesty's Secretary of State for India,
To—The Government of India, HOME DEPT. *(Public)*

In continuation of my despatch of the 16th of July last, No. 62, and with reference to your service message from Simla, dated the 27th of that month, I herewith forward a copy of a report dated the 6th ultimo, with an appendix, by the Cholera Commissioners at Constantinople and likewise an amended Report by the Commissioners, dated the 21st of May last, on the origin, endemicity, transmissibility and propagation of cholera.

[*Annexure to the Minutes of the 2nd Sitting.*]

Report on the hygienic measures to be adopted for preservation against Asiatic Cholera, drawn up by a Commission consisting of M. M. Gomes, Goodeve, Lenz, Millingen, Monlau, Mühlig, and Spadaro (physicians), and M. M. Keun, Malkom Khan, Segovia, and Vetséra (diplomatists).

DR. MONLAU,
Reporter.

GENTLEMEN AND RIGHT HON'BLE COLLEAGUES,—The Conference has reached the most difficult, if not the most important, part of its labors: after long study of the origin and development, the transmission and propagation of Asiatic Cholera, it is about to occupy itself with the means of preservation against this scourge, which, by its too frequent invasions for the last half century, has been spreading consternation and death over the entire surface of the globe.

In accordance with the nature of the problem, you have decided that the system of preservation should comprise three kinds of measures; 1*st* hygienic measures; 2*nd*, measures of quarantine; 3*rd*, special measures for the East.

You have confided the examination of these three kinds of measures to three Commissions, and the Commission on measures of hygiene now submits to you the results of its deliberations. It does not flatter itself that it has entirely carried out your intentions, but it has no doubt that its work will be perfected under your revision.

In the physical, as in the moral world, the employment of preventive measures against evil is preferable to the necessity of repression, and this is so apparent and so simple that it would be superfluous to

give the reasons in detail. Hence we have the importance of *hygiene*, which is merely the art of preserving the health of man and of the places inhabited by him.

The great importance of hygienic measures may naturally be inferred from the injurious effects resultant upon their being forgotten or transgressed. Not a disease exists which has not originated in, or been aided by, the forgetfulness of hygienic precepts; and, for the rest, every body is acquainted with the important services rendered to therapeutics by hygiene. The earth has been a thousand times ravaged by pestilence merely because the rules of hygiene have been infringed or neglected, and these scourges of pestilence have been chiefly caused to disappear from civilised countries by hygiene. Accordingly, in our opinion, the preservative means furnished by hygiene should have the first place among the measures we are about to recommend against Cholera.

These hygienic measures have the advantage of opposing the progress not only of Asiatic Cholera, but also of every kind of pestilential disease, and of lessening their effect when the invasion cannot be prevented. Therapeutics possess no panaceas, but in hygiene all remedies have a certain character on universality.

Hygienic measures produce, in addition, efficacious and permanent results, which is not always the case with coercive or curative measures. Hygiene never loses any of its conquests.

Let us hasten to add, however, that the efficacy of hygiene depends on the loyal, opportune, energetic, and complete execution of its measures: half measures, lukewarmness, or carelessness in carrying them out never will lead to any satisfactory result, and it is very important that Governments and even individuals should never forget this capital principle, which is the *conditio sine qua non* of the efficiency of hygiene.

It is objected that the action of hygienic measures, although sure and efficacious, is ordinarily slow, appreciable results not being obtained until years, and sometimes centuries, have elapsed. This is true to a certain extent, when auxiliary means are not at hand; but, at the present day, when the progress of human industry has placed almost magical resources in our hands, hygienic measures are capable of receiving the most powerful impetus; the hygiene of the 19th century can and ought to be greatly more active than the hygiene of the Mosaic Age for instance, or the hygiene of the Middle Ages; and the earnest concurrence of Governments, and the support of public opinion, lead us to believe that hygienic measures will henceforth be conceived on a grand scale and put into execution with all the energy and intelligence which should be expected from contemporary science.

Moreover, the public administration of every country in the world has become convinced, by reason as well as by cruel experience, that the expenditure necessitated by preventive measures is eminently reproductive. This conviction will pass to the masses, and everybody will end by admitting, with us, that no hygienic measure is ever too *costly*, and that the disbursement of even the largest sums in carrying out

measures of health is simply equal to laying out money at a very considerable interest. Enormous sums have been spent in bringing the means of destruction to perfection; and can there be any hesitation to spend something for hygiene, which is the art of preservation, the art of sustaining life, and warding off disease and death? No: for the countries in the van of modern civilisation are already undertaking works of hygiene for the improvement of salubrity, such as we now admire, either finished or in progress, in Holland, at Paris, and at Marseilles, for instance, or such as the sewers of London, where £3,000,000 sterling have already been spent merely in the last works of drainage. Great Britain has also extended her solicitude to India, and we have learnt with the most lively satisfaction that she is now devoting a million sterling to drainage, and that she is about to lay out six hundred thousand pounds more for the supply of drinking water to the city of Calcutta.

The hour of sanitary regeneration has come, for the benefits of this regeneration begin to be felt, and we entertain the hope that modern civilization, by its ardor and by the magnificent arsenal of means at its disposal, will soon surpass the gigantic works of ancient Rome as well as the colossal structures and hygienic institutions of the primitive East.

Another final consideration in favor of hygienic measures is that the time is not far distant when they will become perhaps the only measures possible, the only measures capable of inspiring any confidence. The West was recently moved, it is true, by the Cholera invasion of 1865. Asiatic Cholera profiting, like man, by modern discoveries, makes its incursions much more easily than it did fifty years ago, and spreads itself far and wide with all the rapidity of steamboats and railroads. Europe has, therefore, been forced to reflect seriously on the means of baffling future incursions of this Asiatic scourge, and we find ourselves assembled here to seek out in common the best system of defence to be adopted. At this moment, people are disposed to agree to everything; all the world is agreed that measures of quarantine are, after all, considerably less prejudicial to industry and commerce than the invasions of Cholera and their consequences; but in the course of time, it will happen that each country will alter the rules of quarantines so as to make them correspond merely with its own peculiar interests. Navigation and commerce, apparently docile, at present, under the yoke of lazarettos and purifying agents, will soon return to their natural antipathy against any kind of impediment in their way; wars, great colonial interests, vast undertakings of transport, will, compelled by their necessities, swell the cry of navigation, and it may well happen that the indispensable severity of measures, of quarantine will be lessened, and they will fall into disuetude. But Asiatic Cholera, or any other pestilence, may very probably reappear sooner or later; and when it does, the people of the West will be glad again to have recourse to serious quarantines; but, taken by surprise, it will be too late to oppose its invasion, and they will, perhaps, have no other means of defence than the hygienic improvements effected in their ports and foci of population, in naval construction, and in the sanitary regulations of the great assemblages who keep moving about.

Influenced by these considerations, the Commission devoted itself to the examination of measures of preservation by means of hygiene.

After having examined them, we decided on the following mode of exposition :—

1*st.*—Hygienic measures to be adopted in localities or countries reputed to be permanent foci of Cholera.

2*nd.*—Hygienic measures to prevent, as far as possible, the importation of Cholera by sea *(Naval hygiene)*.

3*rd.*—Hygienic measures to diminish the chances of reception of the disease in ports *(Improvement of the health of ports)*.

4*th.*—Hygienic measures to diminish the predisposition of localities to contract the disease *(Improvement of health of cities)*.

5*th.*—Hygienic measures to arrest, as much as possible, the spreading of the disease to the heart of a country.

6*th.*—Lastly, hygienic measures to prevent the formation of, and to extinguish, existing foci of infection by destroying the germs of the disease either in the air or in contaminated articles *(Disinfection)*.

Thus, then, the plan of preservation and defence which the Commission is about to develope is to exhaust, within possible limits, the generating sources of Asiatic Cholera; then to oppose the importation of the disease; to keep incessantly removing the predisposition of localities to contract it, and to mitigate its ravages when, spite of all precautions, the disease has penetrated to a spot, and all this by means of hygiene.

In this sketch all prophylactic measures will naturally find their place; and, moreover, this method of exposition has the advantage of being in perfect accordance with the programme which the Conference was good enough to draw up as a guide to the labors of the Commission.

I

To trace the source of the evil, to lay it bear in all its extent, to combat it forcibly until its final extinction, are, it is evident, the means by which to prevent its return for ever. And this is why, gentlemen, the first question proposed to us for solution in your programme is to find out whether there are any preventive means for the extinction of the original foci of Cholera in India.

The problem is somewhat difficult of solution, and you have yourselves acknowledged this almost insurmountable difficulty by confessing in one of the conclusions already adopted by the Conference, that we are ignorant of the special conditions under which Cholera is generated in India and stays there endemically in certain localities. The matter in hand, in fact, relates to an endemic disease, and endemic diseases, to use the ordinary pathological expression of any country, contain at the

bottom something specific, constituting, as it were, the morbid idiosyncrasy of certain countries. Some of these endemic diseases are easily enough explained by the action of known influences; but there are others which are most disastrous, and whose etiology is most obscure. We know nothing precise about them, but we believe that the mysterious and impalpable production of epidemics is really nothing but the result of the combination of anti-hygienic influences. It is unquestionable that hygienic measures, or the progress of hygiene, always tend to destroy the causes of endemic diseases, or to mitigate their sad results.

What we have just said causes us to attempt, with some hope of success, the solution of the problem of the extinction of endemic Cholera. We cannot, it is true, act directly on the prime working cause of Cholera in India; we do not maintain that we can stifle it in its cradle; but in removing the various causes which experience has led us to consider as occasioning, or being auxiliary to, the generation of the scourge, perhaps we may succeed in depriving it of its chief strength, to confine it within fixed limits, to do away with its characteristic of being capable of importation, and, at all events, we are sure of arriving at profitable results. We cannot act directly on what is unknown to us, but we can act indirectly, by a sort of perturbation, that is, in disturbing by means of hygiene the course of the fatal elaboration of Cholera, or, which comes to the same thing, by modifying the static and dynamic condition of the inhabitants of the country, thus destroying their individual liability to contract the disease.

And now, the Commission thinks it indispensable that what it means by the expression *original focus* of Cholera should be distinctly understood. The Commission, wishing to leave every sort of theory aside in the course of its labors, and not desiring to enter upon sterile controversies, considers simply that an *original focus* means every locality in which Cholera has established itself *permanently*, without enquiring whether this permanence is due to certain natural conditions of soil and climate, or to artificial conditions created by man himself, to renewed and continual causes of generation, or simply to repeated transmissions of the disease. By regarding original foci of Cholera in this aspect, we dispense with all search after *special* means, and need only occupy ourselves with such hygienic measures as are everywhere admitted to be efficacious against every kind of pestilential disease, and consequently against Cholera. The Commission then will have to examine to what extent these measures are applicable, or have been already applied, in India, and what results may reasonably be expected from them.

The Commission is fortunate in having as one of its members Dr. Goodeve, the most competent man, by his long residence in India, for pointing out, on the one hand, the difficulties opposed in that country to the introduction of hygienic measures on a grand scale, these difficulties arising from the extent of the country, the conditions of the soil, the number of the people, and their intellectual condition; and, on the other hand, to show to what extent these measures have already been carried out by the solicitude of the British Government.

Not to devote too much space to the examination of one question to the prejudice of the rest, let us be permitted to confine ourselves to a simple enumeration of the hygienic measures already carried out, or in course of execution in India, without entering into their details or their appreciation. With a view to impart a certain amount of order to this enumeration, we shall commence with the measures relative to the *organisation of the sanitary department*.

In the beginning of the year 1864, the British Government constituted, in addition to the departments already existing, three new permanent Sanitary Commissions, at Calcutta, Madras, and Bombay. These Commissions consist of members of the civil service and officers of the army, medical officers, and army engineers. These Commissions are supposed, in accordance with the orders constituting them, to organise the general sanitary administration of each presidency, and local and executive boards of health for the supervision of the sanitation of towns, the appointment of health officers, &c. The plans for the organisation of these local boards of health have already been submitted to the Government and taken into consideration. The duties of three permanent Sanitary Commissions are, moreover, thus defined in the orders of Government: to give advice and assistance in everything concerning the public health; to look after the sanitary condition of the European and Native population; to furnish reports on the prevailing diseases, the causes and the means of preventing epidemic diseases; to give advice on the means of improving the sanitary condition of native towns, the sites of new stations, the positions of new cantonments and bazars, or the sanitary improvement of existing bazars and stations; to examine new plans for the construction of barracks and hospitals, &c.; the whole constituting an excellent, and at the same time, indispensable series of measures preliminary to the attainment of satisfactory results.

Let us proceed now to measures in connexion with *improvement of the sanitary conditions of towns*, an improvement which has very recently been entered upon on a somewhat large scale. In the first place, at Calcutta, a colossal system of drainage has been in progress for some years past, the system comprising the entire city, and separating the existing sewers from the river. The Government of Bengal has already sanctioned the construction of an aqueduct for the supply of the town with fresh water (brought from a distance of 25 kilométres = 15·534 miles) and also of pipes and conduits for its distribution. The old sewers, which were crammed with filth and refuse, have been quite cleaned out, and the public latrines have been inconsiderably improved: their contents are carried every day a league away and buried in a spot of waste land, and a railroad is in course of construction for the carriage out of town of all ordure and filth in well closed vessels. Every trade or occupation hurtful to health has been prohibited within the city; the municipality has undertaken the construction of a great public slaughter house without the town, and as soon as it is finished, all the present slaughter houses will be suppressed. All filth, organic matter, rubbish and dead animals are carried away every day and burnt in a furnace a league from the town.

Lastly, the deplorable custom of casting corpses into the Hooghly has been absolutely prohibited in town; the corpses are burnt, and the fuel for incineration is furnished to the poor at the cost of the municipality.

In the town of Bombay, not to speak of many improvements which have long been in existence, a commencement has recently been made towards the formation of a most complete system of cleanliness; the streets have been widened, and by this means, as also by the levelling of the walls of the old fort, ventilation has been considerably increased. By the construction of new districts in the town, an endeavor has been made to remedy the crowding of the dwellings of the poorer classes. The Government has also an *Act* under consideration for regulating these matters by law, as well as the height of houses, the minimum of openings for the ventilation of apartments, &c.

In the town of Madras plans are in course of preparation for the construction of great aqueducts for the supply of excellent water to the town, an improvement to which will be added an excellent system of drainage.

We may add that, besides these works in the presidency towns, the improvement of the sanitary condition of many other towns, especially those adjoining military stations, is already in full course of execution.

The detailed enumeration of the hygienic measures adopted *with regard to troops* and now in execution for a long series of years would lead us too far. Amongst these measures, those relative to the removal and dispersion of the men in times of cholera deserve special mention, which shall be made hereafter. It suffices to say here that, thanks to all these measures, the sanitary condition of the troops has been considerably improved within the last 10 or 15 years. The barracks in military stations have been enlarged and improved, and in many cantonments altogether rebuilt according to a model in accordance with the most advanced conditions that hygiene has a right to expect in connexion with position, aspect, abundance of water, means of ablution, latrines, &c. The latrines are cleaned and emptied daily; the *dejecta* of cholera patients are disinfected by chemical agents and buried far away from barracks and encampments; sick men have to make use of separate latrines; they are placed under treatment in special hospitals; their beds and linen are burnt, the barracks and other dwellings are purified and whitewashed before the return of the troops who have been removed or separated on the outbreak of any epidemic.

The transmissibility of cholera having been recognised in India, as elsewhere, within a short time past only, it is only lately that sanitary measures have commenced to be based upon the principle of transmissibility. In India special measures founded on the transmissibility of the disease were not taken into serious consideration until after the submission of the report of Mr. Strachey, President of the Committee of enquiry into the epidemic of 1861 in the North-Western Provinces; and it was not till a still more recent period that any serious thought

was given to the danger arising from the *pilgrimages of the Hindoos*, though the danger was, it is true, pointed out long ago by Graves and others. In the Annual Report of Bombay for 1863 (*Deaths in Bombay during* 1863), Dr. Haines shows in detail the probable influence of pilgrimages on the town of Bombay. The Principal Inspector General of the Medical Department at Madras, in his report on the mortality at Madras in 1864 (*Tenth Annual Report on the causes of death in Madras for* 1864), again attributes to individuals returning from the festivals at Conjeveram, Tripetty, Trivellore, &c., the frequent importation of cholera into the town of Madras, in the same way that he had already, in 1860, attributed the propagation of cholera through the Central Provinces to the pilgrims returning from the temples of Mahadeo. Dr. Leith, President of the Sanitary Commission of Bombay, tells us, in his Report of the 10th March 1866, that, in consequence of measures taken for the prevention of the ravages of cholera among the pilgrims, a singularly successful result was obtained: there were *ninety-four* places of pilgrimage, and though cholera raged in the Presidency, it broke out in *two* only of these places, *viz.*, at Jeypoorie, where 5,000 devotees were assembled, and at Sumgum, where the assemblage amounted to 50,000. The mortality was not considerable at either of these places. We have here a striking example of the power of hygienic measures.

The measures taken for the prevention of the dangers arising from pilgrimages are of two sorts:—1*st*, measures to prevent the development of cholera at the places of pilgrimage during the stay of the pilgrims; 2*nd*, measures to prevent the propagation of the disease by the pilgrims on their way back to their homes.

The measures taken at the places of pilgrimage were, in regard to Conjeveram, the construction of sufficient latrines, the removal and burial at a distance twice a day of alvine *dejecta*, the daily sweeping and watering of the streets, and the removal in carts of all filth and rubbish; the town was provided with good drinking water in sufficient quantity and accessible to all; and cattle was removed from the town. Thanks to these measures, there was no cholera at Conjeveram during the festivals of 1864 and 1865, a thing unheard of till then.

At Bombay vast camps were established for the pilgrims, so as to prevent crowding in the towns; there were hospitals for the pilgrims and a system of cleanliness; latrines were constructed, which in some places consisted merely of trenches dug in the earth to leeward, at a convenient distance from the encampments, and filled with earth after being used.

In regard to the *return of the pilgrims*, the Government of Bombay applies Section 271 of the Penal Code, relative to contagious diseases, and causes the entrance of the pilgrims into towns and military stations to be watched, requiring, before permission to enter is given them, that proof should be afforded that they are not suffering from diarrhœa or other indications of cholera, and that they have had no communication

for 48 hours with any persons showing such symptoms. In the absence of such proof, the pilgrims are retained under observation for 48 hours, after which, if no sign of the disease is shown, they are admitted to the town. In the contrary event, the sick are separated from the healthy, and the latter have to recommence the quarantine of observation of 48 hours. In the application of these measures, arrangements are made for the supply to the pilgrims of provisions, shelter, and even medical attendance. If there are no means of supplying them with ordinary tents, tents are made in the native fashion; latrines have to be constructed to the leeward of the encampment; these may consist simply of trenches of a foot and a half in depth by as many in breadth; these latrines to be the only places resorted to by the pilgrims, and the pilgrims are required, immediately after having made use of them, to cover their excrement with earth. The sick have to be separated from the other pilgrims, and disinfectants applied to their *dejecta*, such as the solution of permanganate of potash, chloride of zinc, carbolic acid, or, if these substances are not available, quicklime.

Great difficulties are met with in carrying into operation the regulation of these pilgrimages; it may be seen that it has not yet been definitively settled, and it is to be hoped that these rules will year by year receive all the modifications, the utility and even necessity of which shall be demonstrated by experience.

In closely examining all the hygienic measures in course of execution in India, nobody can deny the great and salutary influence which they must necessarily exercise on the intensity of epidemics in general, and especially on an epidemic of cholera, by diminishing the predisposition to choleraic infection, and by destroying many of the auxiliary causes of cholera. Still, we may be permitted to bring to recollection that hygienic measures, by themselves, will not suffice for the extinction of cholera at no distant date, for although their influence is sure and indubitable, and though no other means can be substituted for this influence, they merely act progressively; they will perhaps end by extinguishing cholera, by mitigating its ravages in the first instance, but we should like to have less slow results. It is necessary that we should forewarn ourselves against importation, we must oppose serious and decisive obstacles to the propagation of a disease so transmissible as cholera: this transmissibility may give rise to murderous epidemics while a single permanent focus of cholera remains in existence, and it may even be said while a single individual suffering from cholera remains in existence. It may be distinctly seen then that direct measures against importation and propagation *(restrictive measures)* are indispensable, and that they will remain so for a long time to come. Although they do not properly belong to the province of general hygiene, we cannot but recommend them now as being, at the present time, the most valuable precaution against the importation of the scourge; but this same advice will probably be given you, and with more authority and in greater detail, by the Commission charged with the submission of a complete plan for the sanitary regulation of pilgrimages.

The Commission hopes that every Government having possessions in India will think fit to work towards the same humane end by the adoption of hygienic measures similar to those taken in British India, and by having them carried into effect in their respective territories in accordance with local necessities.

In recognising and appreciating all the advantages already partly acquired, and in larger degree still to be expected, from the hygienic measures adopted in India, the Commission concludes that—

There are no direct means of extinguishing the endemic foci of cholera, but we hope to arrive at that object by means of a uniform series of measures, in which the most important part will be played by hygienic measures.

The Commission hopes also that the British Government will pursue and widen the road of reform on which it has so successfully entered; but we would recommend it specially not to abandon *coercive* measures. The transmissibility of cholera being granted, and the slow action of hygienic measures being recognized, measures of restriction and isolation will be indispensable for a long time yet, in the first place, to prevent importation, which is always imminent, and then to give time to hygienic measures to make their effects felt.

II.

Notwithstanding all the efficacy of the preventive means employed in India, their action, it must be repeated, is always slow: it is the peculiarity of all hygienic measures, as we said at the commencement. After having, as far as possible, prevented the production of the evil, it is necessary, as often as it is produced, to bar its passage and prevent its importation, above all by sea, the most dangerous of all ways of communication, but that which, at the same time, is the best adapted for the application of efficacious precautions. These precautions we can take in abundance from *Naval hygiene.*

Navigation daily becomes more active and more rapid. The number of ships has increased surprisingly within the last 60 years. Reckon men-of-war and merchant vessels, ships that take the long sea route and coasting vessels, sailing ships and steamboats; count the thousands of men comprising their crews; the thousands of passengers; the millions of tons of merchandise carried by these ships; and the immense number of families whose subsistence depends on naval industry; then only can you calculate the number of lives and the amount of material and even moral interests, whose destinies are bound up with the destiny of navigation and with the progress of hygiene in ships.

Such progress has been very considerable for a century past; the average annual number of deaths in the English marine, for instance, which is now 11·8 in 1,000 was, years ago, 91 and even 125 in 1,000. Health and morality are always and everywhere strictly connected with measures of hygiene. Great improvements have been effected, but much yet remains to be done.

In regard to cholera, the Conference has declared in accordance with experience, that maritime communications are the most dangerous, and that they spread the disease far and wide with the greatest certainty. To this danger we must oppose the most severe naval hygiene. The Commission cannot descend to details, which besides will be found in the excellent treatises with which you are all acquainted on naval hygiene, and it therefore confines itself to a rapid enumeration of its principal measures.

In the first place, the ship must be regarded as a habitation and as the eventual receptacle of the morbific germs. Naval hygiene commences in the ship-builder's yard. Thus then we must take into consideration the improvements to be introduced in the preparation of the wood, the planks and timbers used in naval constructions; the impermeability of the planks and ribs forming the hull of a ship; the width of the hatchways; the disposition of the hatches, the port-holes and light ports, and everything relating to the circulation and renewal of air; the cleanliness of the hold and the well; the supply, preparation and preservation of the food and drink; the material and shape of the clothing of the crews, &c., &c.

The study of everything in connexion with the attainment of perfection in naval architecture, or the economy of ships, should be encouraged by the Governments of maritime powers. Prizes and marks of distinction should be conferred on the discoverers of inventions favorable to the salubrity of ships and the health of crews and passengers.

Let us now suppose the ship to be ready for starting. The *hygiene of departure* comprises quite a series of measures which the Commission will only mention.

In the first place, the material and sanitary condition of ships about to leave a port, especially those which are about to undertake a long voyage, should be carefully looked to. The owners should be bound to remedy any inconveniences pointed out to them by the authorities or official agents. The insalubrity of many old vessels is too notorious: official provision should be carried to the extent even of prohibiting the sailing of vessels whose bad condition converts them into so many endemic foci of fever, dysentery, and every kind of disease.

The condition of the merchandise, having regard to its conditions of salubrity, also deserves attention. For instance, the shipment of damp goods, or things recently wet by rain, should be prevented; logs or heavy planks, coming from rivers or marshy lands, should be washed and dried as much as possible before being put on board; and the shipment of goods or raw material, especially of an organic nature, should be prevented if they are soiled, damaged, or decomposed.

The nature of the ballast, as well as the mode of stowage, should be the object of most important precautions.

The clothes of the sailors should be carefully looked after, as well as the details of the number of changes they have, and the condition of their bunks and hammocks.

Before the departure of a vessel, it is necessary to look after the quantity and quality of the food and drink. In the latter, drinking water deserves attention, particularly while cholera is raging. The shipment of muddy or contaminated water should always be prevented, but especially then. Even in ordinary times, a strict prohibition should be placed upon the taking of water from streams, rivers, or springs, the water of which may be suspected to be unwholesome.

On the departure of a vessel, hygiene also demands that the state of health of the crew should be strictly looked to by a medical man. The number of sailors, moreover, should be in proportion to the tonnage of the ship, and the duration of the voyage.

It is also of the highest importance that the health of the passengers should be enquired into as far as possible. Their number should always be proportionate to the tonnage of the ship, to the capacity of its cabins, the number of beds, mattrasses, coverings, the length of the voyage, &c.

Crowding is the great inconvenience on boardships, especially in times of cholera. The Commission has no hesitation in proposing that there should be rules fixing the maximum number of passengers whose embarkation should be permitted, and a resolute restraint placed upon the cupidity of transport companies and masters of merchant vessels, who are always ready to take in passengers and crowd the cabins and even the decks of their ships with them, in contravention of the elementary conditions of life and health.

The cubic space of air is often insufficient in ships, especially at night, and the ventilation is not often perfect. What will be the result when these two radical causes of insalubrity are combined with overcrowding, with the product of the respiration and perspiration of so many men gathered together, the evaporation from damp clothes, the effluvia evolved from hammocks and bunks, soiled linen, sick people, &c.? It is not difficult to foresee the grievous results of such permanent mephitism, which is one of the auxiliary causes of the development of every sort of evil.

The transport of living animals claims all the attention of naval hygiene on the departure of a ship. Leaving aside the capability of cholera being imported by living animals, a question on which the Conference has refrained from giving a formal opinion, it is necessary carefully to prevent infection on board by overcrowding amongst cattle, and to save ports of destination the revolting spectacle of animals being landed in a state of asphyxia. The heedlessness, not to say cruelty, of certain captains, or masters of vessels, is incredible; and remarkable facts bearing on this point have been adduced before the Commission.

We would also call the attention of sanitary authorities to the necessity for the presence of a physician, or a surgeon, on board such vessels as generally carry passengers, or where the crew exceeds a certain number. We have a remark to make in connection with this matter; the presence of a physician on board is always a benefit to the sailors and passengers; but when it is viewed as a guarantee against the importation of cholera, as a source of information, and, above all, as an extenuating circumstance in the matter of quarantine, it becomes a question worthy of deep and deliberate reflection. The conditions of entrance into the service, the mode of nominating these physicians, their titles and their pay, their character, official and private, &c., are all circumstances which should be taken into consideration. Your Commission confines itself to saying that the sanitary duties on boardships of the mercantile marine should be regulated by the public administration.

As a last measure of hygiene on the departure of a vessel, the Commission is of opinion that all vessels should be bound to supply themselves with a portable medicine chest containing the usual supply of medicines and with all the necessary instruments for surgical operations. The sanitary authorities should prepare the catalogue of these medicines, draw up *Medical Instructions*, in regard to their use for ships having no physician on board, and render it obligatory on every vessel to take the medicine chest on board before departure. Disinfecting substances should have a large place in it.

All these measures, or the majority of them, are very well known, and are even obligatory in some countries, and it is greatly to be desired that they should be rendered obligatory everywhere.

The *hygiene of the voyage* is merely the sequel of the hygiene of departure. A ship which has left under all desirable good sanitary conditions may very easily lose all these advantages, if it neglects to adop the precautions prescribed by the hygiene of the voyage.

This hygiene is not difficult to define; it comprises all the precepts of general hygiene, modified in accordance with the special exigencies of the maritime atmosphere, the ship, and the naval profession.

In the first place, the most exquisite neatness in the ship, the accommodation for the crew, and the passenger cabins, cannot be too strongly recommended.

The hold transforms ships into perfect floating swamps if the cleanliness of this most difficult part of naval habitations is even slightly neglected. This cleanliness may be obtained by methodical stowage, by the proper preservation of the cargo and provisions, by continual ventilation, and by the renewal of the water in the hold. Frequent pumping must be resorted to for the removal of the stagnant water in the well; the formation of the blackish filth which is deposited at the bottom must be prevented as much as possible; and, finally, this part of the vessel must be effectually disinfected when ventilation and the addition of clean water are insufficient to render this perpetual focus of unhealthiness inoffensive.

Insufficiency of ventilation, difficulty of penetration by the sun's rays to the interior of a ship, and consequent dampness,—such are the inconveniences which must be fought against, by continual ventilation through the ordinary openings (to be properly situated and of sufficient diameter), and artificial ventilation, by means of the various apparatus which have been suggested, and amongst which the double ventilator of M. Peyre deserves special remark.

The practice of taking advantage of fine weather to open the hatches and of exposing the clothes and bedding of the crew to the sun and air must never be neglected under any pretext whatever. The sailors should wash themselves frequently, change their linen at least once a week, take off their wet clothes before going to sleep; in a word, every care must be taken to remove every cause, direct or indirect, of uncleanliness, crowding, and infection.

As for the dietary, it need not be said that great attention must be paid to the condition of the provisions, fresh and salt, biscuits and drinking water, as well as of the culinary vessels and utensils.

Finally, during the voyage, even the slightest symptom of indisposition must not be neglected. And in ships which have left a port infected with cholera, the slightest diarrhœa, the most simple derangement of the digestive organs, must be the object of most special attention. Persons showing suspicious symptoms must be kept apart as far as possible, and disinfectants must be made use of in accordance with the prescriptions of the Medical *instructions* of which we have spoken above.

Such are the general principles of the hygiene of the voyage.

In regard to the *hygiene of arrival*, it consists only of a series of precautionary measures suited to the sanitary condition of the persons embarked and the hygienic conditions of the vessel. The hygiene of arrival depends in great measure upon the hygiene of departure and the hygiene of the voyage.

When naval hygiene shall have attained a higher degree of perfection, when more attention is devoted to the strict application of its rules, ships will not so frequently carry the germs of death between their sides, or, at least, the chances of the importation of pestilence will be very largely diminished. In the mean time, until the mercantile marine decides more generally to regard the health of ships as one of the great interests of commerce, and habituates itself to the regulation of the sanitary state of its crews and the preservation of the health of its passengers, the public administration must of necessity watch over the preservation of the public health in ports of arrival.

Thus, therefore, all ships, before being admitted to pratique, should be visited with a view to the inspection of their condition, and to seeing in what way sanitary measures have been practised at the departure of the vessel and during the voyage.

In ordinary times, a well kept ship need not necessarily be subjected to any sort of measures; but in the contrary case, the sanitary authorities of the port will use their discretion in regard to the necessity of taking the necessary hygienic measures.

It is to be remarked here that the hygiene of departure and that of arrival fall more directly within the province of the administration, and that it devolves more especially on captains and masters of vessels to adopt proper hygienic measures during the voyage. All these measures should be compiled in a *Manual*, most space being devoted to those to be adopted during the voyage, to be drawn up by the sanitary administration of every country for the use of the mercantile marine. The principal provisions of this code of health and common preservation should be rendered obligatory, and captains should be bound to have some copies of this *Manual* constantly on board, the Manual to comprise, in addition, the *Instructions* in regard to the use of the medicines on board. It need scarcely be said that, for the use of coasting vessels, this *Manual* might be made to assume the form of an abridged summary or small *Guide*, and that for ships of heavy tonnage, or which make long sea voyages, it should contain more details, more special provisions, and should even be completed by information regarding the sanitary regulations of the countries or coasts they most frequent.

The salutary effect of the hygienic measures we have mentioned, applied on a large scale to navigation, would soon begin to make itself felt particularly during invasions of cholera. A statistical table of the mercantile marine of every country, with the number of cases of sickness and death on boardships during the year, would form an excellent means of discovering exactly the effect of the serious application of naval hygiene, and of recording its progress. The office of registry, and the rule obtaining in Great Britain on this subject, correspond, or very nearly so, with what the Commission desires. We would wish besides that owners, captains, and masters of vessels whose crews furnish the smallest proportion of illness and mortality, should receive a prize or some other recompense as an encouragement of their zeal.

Would it be desirable to institute punishments as well as rewards? The government of every country must be the best judge of the fitness of penal provisions in regard to this matter. The Commission would merely bring to mind that the system of pecuniary rewards, given with a view to the preservation of passengers and crews, has frequently been tried, and particularly in England, and always with the best results. Many thousands of emigrants, of transported felons, and of soldiers, have been indebted for their lives to the application of this system. To base the price of transport, and even the fees of surgeons on boardships, on the number of passengers landed in good health, is an indirect but very efficacious way of arriving at perfection in naval hygiene.

Having demonstrated the importance of this hygiene, and having briefly indicated the rules of which it consists, the conclusion to be

established follows naturally from the considerations put forth. In the opinion of the Commission, then, what should be done is as follows:—

1*st.*—*The opening out of competition and the award of rewards to the authors of discoveries or improvements the immediate result of which would be some progress in the sanitation of vessels, the hygienic condition of the crews, and the well being of the passengers.*

2*nd.*—*The publication of a* MANUAL OF NAVAL HYGIENE *adapted to the use of the mercantile marine of every country. The carrying out of the most important provisions in the* MANUAL *should be obligatory on captains and masters.*

3*rd.*—*The encouragement by rewards and recompenses of such owners, captains, and masters of vessels as distinguish themselves by the good and careful preservation of their ships and crews.*

III.

A mere arrival from an infected locality is not of itself sufficient to produce the outbreak of Asiatic cholera in any place: there must be a *capacity for its reception* in that place, and there must be circumstances favoring its transmission. Cholera may be imported, and it is so very frequently, without being transmitted or received.

What are these circumstances favoring its transmission? Hygiene would gain greatly in precision and authority if it could succeed in defining them all; preservation against cholera would not then be such a difficult task. Unhappily we have no correct knowledge of these circumstances; but at the same time we can, under certain limits, base our precepts upon a solid foundation. If we do not know all the conditions of receptivity, we are, at any rate, acquainted with certain unfortunate circumstances almost always favorable to the transmission and rapid extension of pestilential diseases. The unhealthiness of ports is one. The importation being granted, the transmission is always more to be feared in an infected than in a healthy port.

The *sanitation of ports* is, then, one of the measures of hygiene contributing most to our preservation against the scourge by the diminution of the local capacity for reception. At any rate, a sensible mitigation of the eventual ravages of the disease would result from the measure. Moreover, after having insisted so strongly on the improvement of the health of generating foci of cholera, and after having so warmly recommended hygienic precautions to ships, the most ordinary conducting vehicles of the disease, it is logical to improve equally the health of ports, which are the first places to receive cholera. The sanitation of ports is always the fulfilment of a duty towards the inhabitants of the sea board, and it forms also a diminution of the chances of receiving diseases capable of importation, while at the same time it affords much stronger grounds for acting with vigor against arrivals whose hygienic condition are not altogether irreproachable. Unfortunately, many Mediterranean ports still deserve, in a hygienic point of view, reproaches not less severe than ill kept ships.

To soil the pure water of streams and rivers with filth, to cover the limpid depths of anchoring grounds with excrementitious matters, and to transform the basins of our ports into *cloacæ*, is always a sort of profanation, an act of barbarism, an attack against health. It is, in fact, only too common to choose the basins of seaports as receptacles of all the ordure of the town. It is said indeed that these matters do not exercise any influence on the inhabitants, because they are carried far out to sea and submerged. This, however, is nothing: it is forgotten that, by their specific gravity, these matters are quickly deposited at the bottom, but that the tide, or the currents and winds in the direction of the sea coast, keep driving them continually towards the shore. It is only necessary to visit one of these ports at low tide, or on the approach of a storm, or in foggy weather, to be convinced by the fœtid exhalations from this enormous bed of slime and black dirt, how pernicious they must prove to those who inhale them. It is evident that the hotter the climate of the port is, the more this deleterious influence must manifest itself.

We are well aware that ships in port naturally soil the water of the basin by cinders and ashes, *dejecta*, and other filth, but this inconvenience must be diminished as much as possible by means of police regulations on shore so as to avert from ports the innumerable causes of infection which gather together there. On account of this unavoidable soiling of seaports, it is necessary, moreover, to drag and cleanse them at more or less frequent intervals, according to the number of ships, the climate, &c. Considering that the cleansing of the basin becomes indispensable from the mere fact of the frequenting of the port, it is deplorable to see the infection caused by ships added to by that from the sinks and latrines of the town. The considerable part performed in the manifestation and propagation of cholera by alvine *dejecta* is well known; it is also known that the disease is very frequently imported by sea; consequently, arrivals from an infected locality find in these ports a soil eminently propitious to the development of the morbific germs, and there is no reason for astonishment that cholera should be transmitted so speedily from the sea board to the towns and be propagated with such murderous effect. It is a matter of extreme urgency to sanitate our ports, to enlarge them, to establish a strict interior police, and especially to keep off from all connexion with the basin all filthy water and the sinks and latrines of the town.

We would also direct the attention of the administration to the environs ordinarily formed round the most frequented ports. The operations of large ports require, in fact, numbers of caulkers and other workmen for the repairs of ships, workmen employed in the manufacture of rigging and sailmaking; and porters for the shipping, landing, and carriage of merchandise. All these people, with the families of the crews, and a certain number of sailors, sick or out of work, fishermen, &c., naturally live as close as they can to the port, and give rise to the creation of a sort of maritime quarter attached to the town. This quarter is far from fulfilling the conditions desired by

municipal hygiene. Small liquor shops, dirty taverns, filthy and infectious lodging-houses, vice and misery, are the prominent features of such a place. The population of this maritime quarter is in constant communication with the ships in port, and the first cases of cholera almost always display themselves in its midst. Measures of isolation would be the best means of protecting the town; but the inconveniences attendant upon these measures are ordinarily very grave and almost insurmountable. It becomes, then, a matter of necessity to forearm ourselves by hygiene, by improving the health of these localities, by diminishing the chances of receiving the disease, and, by the careful carrying out of the strictest sanitary regulations under the supervision of health officers, preventing the formation of foci of infection. In some ports of England and Holland, one of the necessities of these quarters has been very wisely provided for: a sort of asylum (a sailors' home) has been provided for unemployed seamen, where they are suitably lodged, and taken care of in the event of sickness. We think this example is deserving of imitation in all great ports.

The Commission now sums up its ideas in the following conclusion:—

The sanitation of ports, and a strict prohibition against the emptying of sewers into them, their periodical dragging, and their good interior sanitary police, are all hygienic measures of the highest importance with regard to preservation against transmissible diseases in general and cholera in particular. The sanitation of the maritime quarters attached to sea ports, and the establishment in them of the strictest sanitary police, are also most important measures of preservation.

IV.

After the sanitation of ports, we must look to the sanitation of towns. The causes of infection retained by a town in its midst are numerous: the emanations arising from persons crowded together in confined dwellings; the exhalations from stables and cattle sheds, sinks, sewers, and latrines; the emanations from manufactories, mills, and workshops; the influence of dirt accumulated on the roads; the influence of the shambles, hospitals, alms-houses, cemeteries, barracks, and prisons, as well as the want of the fresh air, the absence of sunlight, and dampness; such are the causes (and we have not by any means enumerated all) of the general unhealthiness of centres of population. Hygiene did not preside at the formation of these centres; on the contrary, municipal hygiene took rise only in consequence of the evils of which they became the centres. The science, created *á posteriori*, has as its mission the amendment of the disorders occasioned by the ignorance or negligence of every principle of public health. This amendment has hitherto been only too slow; we believe it is high time to accelerate it, in the first place because there are abundant means for the improvement of health, and because the necessity of saving entire classes of the population from cachexy and death becomes more pressing every day.

The sanitation of a town is, in point of fact, the diminution of the rate of mortality, and the increase of its general well-being: it is also the destruction or at least the very considerable decrease of the local and individual predisposition to receive and contract diseases capable of importation, and it is moreover the no less sensible mitigation of the ravages of these diseases when it has not been found possible to prevent their transmission. From this latter point of view, and especially in connection with Asiatic cholera, the Commission regards the sanitation of towns.

This sanitation embraces hygiene in its entirety, but we limit ourselves to passing in review the three most important heads, *viz.*, *air*, *water*, and *soil*. Their importance has been recognised for ages past, for, in point of fact, it is evident that every thing directly, or indirectly, connected with the healthiness of any inhabited place may be summed up in the *purity of the air*, *the wholesomeness of the water*, *and the good quality of the soil*.

Air.—The height of the buildings, the narrowness and tortuousness of the streets, the continual emanations from human and animal excretions, the rubbish of markets, and a thousand other causes, make the atmosphere of great towns come very nearly under the conditions of confined air. The insalubrity of an urban atmosphere strikes the senses merely on entering the gates of great towns on a return from the country. It is not difficult to foresee the effects of such an atmosphere, with which the inhabitant of a city is brought into constant and necessary connexion.

Let us examine, in a practical point of view, some of the causes of the vitiation of the air.

The air may be vitiated in the first place by its insufficiency in proportion to the number of individuals breathing it. These individuals would not have been able to pollute the atmosphere if they had been spread over a suitable space, at any rate no sensible pollution would have resulted; but crowded together in a narrow, confined space, they corrupt it by their various emanations. To this cause may be ascribed the deleterious effects of the crowding together in lodgings of the poorer classes, who should be specially watched over by Government. *Commissions on unhealthy dwellings*, like those of Paris, or other associations specially devoted to the lodgings of the poorer classes, as in London for example, would render the greatest service to public health if established in every town. In many of the great cities of Europe the construction of special houses has been commenced, designed to afford cheap and healthy lodgings to the working classes, and the Commission can only express a fervent hope that this signal means of beneficence may be immitated and spread far and wide.

Stagnation, that is, the absence of renewal, is also one of the principal causes of the vitiation of the air. The same cubic space of air may serve without inconvenience to a much greater number of individuals if it is continually renewed. Hence the importance of free ventilation for

lodgings as well as for the entire town; for streets which are too narrow and angular, and small squares surrounded by high houses, extend to an entire population the hurtful influence exercised on individuals by badly ventilated chambers. This influence manifests itself especially during the prevalence of cholera (for which the air serves as the chief vehicle), because the air, slowly and insufficiently renewed, may communicate the disease to many more individuals than it could were it constantly agitated by the wind. On the other hand, we deprive ourselves, by insufficient ventilation, of one of the most powerful and facile agents of disinfection, *viz., fresh air:* houses which have remained shut up after having been visited by cholera have transmitted the disease even after the extinction of the epidemic.

We may also mention a third source of impurity in the air, its *direct intermixture* with *deleterious gases,* and especially its intermixture with gases developed by the decomposition of organic matter. To this cause are to be ascribed the exhalations from the soil, of which we shall speak presently. We confine ourselves to remarking at present that substances which infect the air through the intermediate agency of the soil may do so in quite as direct a manner before having impregnated the soil. For this reason, industrial establishments giving rise to putrid emanations of this nature should not be tolerated within the limits of a town, as for example, manufactories of desiccated night-soil, tanneries, glue manufactories, soap-boiling establishments, as also slaughter-houses. In fact, the greatest neatness and cleanliness should generally exist in towns; puddles of stagnant water, accumulations of dirt in streets and public places, should not be allowed. Ordure, of whatever nature, should be carried off under the direction of the municipal administration rather than that of individuals or owners of houses. Of all causes of impurity in the air of towns, cesspools and latrines are the most active. We shall return to them in connection with the soil. It may suffice to say here that the gases evolved by excrementitious matters in a state of decomposition (especially carbonate and sulph-hydrate of ammonia and hydrosulphuric gas) have a direct morbid influence on man. We take two examples from the *Report of the General Board of Health on the Epidemic Cholera of* 1848 and 1849, reporting the sudden appearance in Spitalfields and Southwark of violent diarrhœa in a large number of persons exposed to the emanations from a neighbouring manufactory of desiccated night-soil. In both cases the diarrhœa ceased when the manufactories were shut up. The experiments tried in 1848 by Mr. Herbert Baker upon dogs are equally conclusive. He exposed the animals to exhalations from *cloacæ,* and they invariably, after a few hours, displayed symptoms of *diarrhœa* and *vomiting.* This deleterious effect of the above-mentioned gases proves the necessity of immediately carrying away excrementitious matter, or at least of disinfecting it on the spot, and of neutralising or absorbing these gases by antiseptic substances.

We shall terminate this chapter by some striking instances which will demonstrate the good results which may be arrived at by the purification of the air. Dr. Marshall relates that at Ely, in

England, after having improved the condition of the sewers and stopped up the pools of water and open cesspools, the mortality was reduced from 25·6 to 17·2 in a thousand, and that the average duration of life was raised by four years and a half. Dr. Carpenter says that since the construction of good sewers and sinks at Croydon (in 1853) the mortality has been reduced from 28·5 to 15·9 in a thousand, and that typhus has nearly been extinguished in those parts where formerly it was almost endemic. Finally, in the district of the Woolwich arsenal, the suppression of the open cesspools has occasioned a reduction in the mortality from 33 to 19 in a thousand.

Water.—We shall not enter upon a long explanation of the important part performed by good and abundant water in connexion with public health, and the ample supply of which is one of the most sacred duties of municipal administrations. It would be important to show the influence of impure water, as a predisposing cause, and of water contaminated by the choleraic germ, as a direct cause, of the development and propagation of cholera, if this influence were not already generally admitted. We confine ourselves, therefore, to adding a few examples to those which have already been quoted in the report submitted to you on the questions in the first and second groups of the general programme.

The water for the town of Exeter was raised from a part of the river contaminated by *cloacæ*; the number of attacks of cholera in 1832 amounted to a 1,000, of which 347 resulted fatally. After that time the water was brought from a distance of two leagues above the town, and in 1849 there were only 44 cases of cholera: in 1854 there were scarcely any. At Nottingham in 1832, the water being bad, 289 cases of cholera occurred. The water was changed by bringing it from the Trent above the town, and in 1849 there were only 13 cases of cholera, 7 of which ended in death. At Dumfries, in 1832, 1 death from cholera took place in every 28 inhabitants, and in 1849 there was 1 in 32. Better water was then procured, and in 1854 Dumfries escaped almost entirely. At Hull, in 1832, there was not a sufficient quantity of water, but it was pure and good, and there was a total of 300 deaths from cholera. After that period, the water for the port was taken from a part of the river exposed to the influence of the tide and to contamination from *cloacæ*, and in 1849 there were 1,834 fatal cholera cases. One of the most signal examples is recorded by Dr. Acland in his account of the outbreak of cholera at Oxford. There are two gaols at Oxford,—the town prison and the county gaol. In the latter there were 3 cases of cholera in 1832 and 14 in 1845, while the former remained altogether exempt from the disease during both epidemics. The same exemption occurred in 1854, while the county gaol was again attacked. Thirty-seven cases of diarrhœa occurred among 95 prisoners, and 5 attacks of cholera, 4 of which ended fatally. The contrast was too striking not to lead to a search into its causes; an enquiry was instituted, and it was proved that the water which was drunk by the prisoners in the county gaol flowed past a mill, above which it was kept back by an embankment so as to form a dam. While the mill was at work, the

water flowed rapidly, carrying with it all the filth and ordure of the dam, but when the mill stopped work, the flow of the water was interrupted and it formed a sort of pond. In 1854, the river was extremely low, and during the period of the epidemic, the mill-dam was filled from its surface to its lowest depth with every kind of organic detritus; and still more, one of the gaol sewers emptied itself into the pond, and the prison water-pipe took its supply only ten feet away from the sewer. As soon as the causes were known, the use of this contaminated water was discontinued, and this was the result: previous to the 29th of September, the date on which the water was changed, there had been 20 cases of choleraic diarrhœa and 5 cases of cholera, 4 of which resulted in death. Subsequent to the 29th, there were only 3 cases of diarrhœa and 1 of cholera, none of which proved fatal. Not less remarkable was the fact observed in the New-Bailey prison, as reported by Dr. Greenhow. On the morning of the 28th September 1859, there was a sudden outbreak of an epidemic of diarrhœa, some cases of which showed choleraic symptoms (though cholera did not exist in the country). In a total of 466 prisoners, 196 were attacked during the course of four-and-twenty hours, and duing the four following days the number of daily attacks was 56, 7, 5, and 2, forming a total of 266, none of which resulted in death. The causes of the epidemic were sought for, and it was discovered that the wastepipe of the reservoir, the opening of which was kept carefully closed, ended in a sewer. The use of this water was discontinued and the epidemic instantly disappeared. It is remarkable that there was not a single case of diarrhœa among the 53 persons employed in the prison, though they drank water which was brought from the same place as that for the prisoners. It was conducted however, to a different reservoir, which had no pipe in communication with the sewer. This fact would suffice to establish what is indeed easily demonstrable by reasoning, that the absorption by water of putrid gases, without any admixture of liquid or solid matter, may contaminate it, and that the use of such water may occasion choleraic accidents.

The Commission has no doubt that from these examples, the necessity of having pure water will be understood, as well as the danger of its contamination.

We would call to mind, lastly, that water may be contaminated by the *saturation of the soil* (as in the case of wells and reservoirs), or by the *direct introduction of organic matters* (as in the case of streams and rivers). Whence the double inference:—

1*st*.—To keep every reservoir of drinking water far away from all latrines, stables, &c.

2*nd*.—To prevent the water of streams and rivers from which towns take their supply from being soiled by filth and dirt, and the rubbish of manufactories, mills, and workshops, and especially to take care that the contents of sewers and latrines are never discharged into it.

If for any reason the use of more or less impure water should be a matter of necessity, it should previously be purified by boiling, by filtering it through charcoal, and by other means known to be adapted to the

end of purification. In regard to large open reservoirs, such as those which supply Constantinople, the water in which holds a great deal of matter in solution or suspension, it would be well to cause it to pass, before distribution, through a filtering apparatus. The means to be employed will be decided by the special circumstances of each locality. What is important to know is, that organic matter, and especially animal matter, is that which most injures drinking water. It is necessary, therefore, to purify it from these elements, when means have not been made use of to prevent its contamination.

Soil.—The soil, no doubt, performs an important part in the etiology of endemics and epidemics; but it owes its importance rather to its corruption than to its nature. This corruption, in towns, is almost always owing to the carelessness and neglect of man. Instead of preventing, at any cost, the injurious impregnation of the earth on which he treads, he scatters around him broadcast all kinds of organic detritus. Now, everything which tends to saturate the soil of a city with organic matter is a proximate or remote cause of unhealthiness. Yet man, reckless of this truth, turns against his own health, that which on the other hand, he robs from the fertility of the fields. The soil of most towns is at present only a vast receptacle of ordure of every kind, to an extent of which few persons have any adequate conception, and the continual decomposition of this matter contaminates the air and water especially. The prevention of the impurity of the soil should, therefore, be one of the capital points in the sanitation of towns.

Amongst the numerous causes of the infection of the soil, we shall only notice those which are most important by reason of their influence and their connexion with the development of cholera Pettenkofer has calculated that *the excrement of a hundred thousand inhabitants of a town annually impregnates the soil with a mass of putrescible matter equal to that which would result from the decomposition of fifty thousand corpses buried every year in the same place, i. e.,* around the houses. From this calculation, it will be seen at once how great is the infection of the soil by excrementitious matter. It is very easy then to deduce the hygienic rule, which is *to carry away immediately and remove far from inhabited localities the excrement of men and animals.* Such is the precept, but it is scarcely put into practice. In small villages, and even in certain quarters of towns not possessing public latrines, the habit is still retained of depositing excrementitious matter *directly on the soil!* In certain great towns, which one might reasonably expect to be advanced in refinement and civilisation, *open sewers* and cesspools, or *black blind sinks,* also show what small progress they have made in the path of sanitation.

In most towns, the systems of latrines adopted are, 1st, *cesspools;* 2nd, *pipes and sewers;* 3rd, *movable necessaries.*

The most extended system is that of *cesspools.* They are walled and sometimes cemented, and retain the excrementitious matter in deposit during a lapse of time of more or less duration. The impregnation resulting from this vicious system is so strong that, after the great

fire at Hamburg in May 1842, on digging the earth, layers were found of *struvit*, a mineral composed of phosphate of ammonia and magnesia, and which could not but have been the result of the decomposition of human or animal excrementitious matter. In unwalled cesspools the infiltration is so considerable, that there is no occasion to empty them except for one or two years after their construction. Even cemented cesspools do not preserve the soil from being impregnated by excrementitious matter, not only because the cement is not altogether impermeable, especially by gases, but also because the nitrate of ammonia, which forms in cesspools, impairs cement in such a manner as to render it permeable even by liquids. Hirsch quotes the instance of a well, situated at a distance of ten feet from a strongly cemented cesspool, which, six months after the construction of the cesspool, contained such a quantity of putrescent matter as to render it impossible to use the water any longer. As for uncemented cesspools, Stamm remarks that out of 900 wells at Berlin, in the year 1864, the water of 86 was undrinkable, on account of the putrid organic matter contained in them. It is also well known that at Leipsic the water of the Pleisse and of the majority of the wells was so vitiated by the cesspools that it was found necessary to construct an aqueduct for the supply of drinking water to the town.

The system of *pipes* and *sewers*, in use principally in England extends further every day with the use of water-closets. The excrementitious matter is conducted by a system of pipes and sewers (whose incline, as well as the considerable masses of water thrown into them from each necessary, accelerates the flow) either to the sea (about which we have spoken in connexion with ports) or into canals and streams, that is, into drinking water, and we have mentioned the effects of such a custom *á propos* of water. The soil, no doubt, is less impregnated with excrementitious matter by this system than by that of cesspools, but water is proportionably more impregnated; and if sewers are emptied into drinkable water, the system of pipes and sewers is at least as reprehensible as the other in a hygienic point of view. Each of them favors the predisposition to choleraic infection, and each of them may favor the propagation of cholera in the event of invasion by this disease. The system of pipes and sewers is sometimes even more likely to lead to this latter danger, because great numbers of necessaries are in direct communication with great sewers and the dwelling chambers of many houses. The *dejecta* of a single cholera patient cast into a common sewer may suffice to poison many houses at once, by the gases flowing back from the latrine and communicating with the rooms, in houses carrying with them the choleraic principle. This circumstance will explain how it is that cholera often spreads to a great number of houses, all situated on one side of a street, during the course of a single night. This most frequently happens at night, because, all the doors and windows being closed, there is no ventilation to prevent the gases from exercising their influence on the inhabitants for many hours together. Whence the necessity of placing rooms, and especially bedrooms, altogether beyond the influence of water closets communicating with a common sewer.

The Commission will not enter upon a detailed estimate of the improvements in the system of pipes and sewers carried out in many towns in Scotland, and proposed in London, the intention of which is, on the one hand, to preserve streams from excrementitious matter conducted to them by this system, and on the other hand, to utilise such matter for the fertilisation of the fields. The chief end of these improvements is to discharge sewers, not into rivers and streams, but into great reservoirs, whence their liquid contents are raised, as occasion requires, to a certain height by steam-engines, and conducted by inclined pipes, either immediately or after previous disinfection, into the fields. The expenses of such establishments are enormous, while at the same time local conditions, such as the low situation of a town, insufficiency of water, or a great frost during winter, may render it impossible to work them properly, and a certain amount of penetration of the soil by the excrementitious matter is not avoided.

The third system, that of *movable cesspools* (with or without the separation of the liquid matter and the immediate disinfection of the contents) has a tendency to spread in many towns of France, Belgium, Germany and England; it comprises the best hygienic conditions at small cost and without any loss of the excrementitious matter for the fertilisation of the fields. Under this system, the excrements are deposited in a vessel which it is easy to carry away and replace by another, so as to take away the excrements in the vessel itself. Successive improvements in this system have resulted in the entire separation of the liquid from the solid matter (which greatly retards the putrefaction of the latter) and their immediate disinfection. We cannot enter into the details of this system, and we shall only briefly mention three modifications of it: 1st, movable cesspools according to the dividing system of Mosselmann, in which disinfection is effected excluding the urine, by means of quicklime. 2nd, the system of Mueller-Schuer, in which the disinfection of the solid matter is effected by means of quicklime or vegetable charcoal, and that of the urine by peat. The use of this substance is strongly to be recommended for public urinals and for water used for household purposes. 3rd, the English system (dry method) in which the liquid and solid matters are separated, and the latter covered with clay or marl well dried and pulverised.

As the system of movable cesspools in all its modifications requires the more or less immediate removal of the excrementitious matter, it is necessarily placed under two conditions: 1st, a well-regulated system of cleaning; and 2nd, the choice of some fixed spot beyond the town for the deposit of the excrement. In regard to the latter, an especial recommendation is made to have an establishment in connexion with a manufactory of artificial manure (pulverised night-soil.)

All the hygienic advantages of the system of movable cesspools will make themselves specially felt in times of cholera, when it is necessary altogether to avoid the use of latrines communicating with a common sewer; but it is still more preferable during such epidemics

to make use in houses of separate vessels to the exclusion of latrines, it being understood of course that the vessels are immediately emptied and cleaned, and if necessary disinfected.

What we have just said of human *dejecta* applies equally to the *dejecta* of cattle. Accumulations of dung should not be tolerated either in cattle yards, or in the places reserved for its deposit. Urine should be disinfected by peat or other means, before it can infiltrate into the soil.

We would also remark that an effort is frequently made to oppose an epidemic of cholera in its commencement by the general and complete emptying out and cleaning of the latrines and sewers, while at the same time this operation is, by its nature, rather calculated to favor the propagation of the disease. During the presence of an epidemic it is even dangerous to unpave or in any other way disturb the soil of a town.

As organic matter is very speedily and very easily decomposed in damp soil, it is necessary to dry and drain the soil of towns. A *system of trenches*, well walled up and cemented, would cause rain water to flow so as not to infiltrate the soil, and a system of *subterranean drainage* would dry the soil, the dampness of which has always been acknowledged to be a condition favorable to the propagation of cholera, as well as of all endemic diseases.

The mephitism of the soil exercises a great influence on the development of ordinary diarrhœa. According to the official reports on the public health of England the annual mortality from diarrhœa in the districts *(registration districts)* regarded as being the most healthy, does not exceed 30 in a hundred thousand inhabitants, whilst in the ten districts of Coventry, Birmingham, Wolverhampton, Dudley, Merthyr-Tydvil, Nottingham, Leeds, Manchester, Chorlton, and Salford, during the period 1854-1859, it attained (excluding cases of cholera) a figure varying from 106 to 266 in a hundred thousand, *i. e.*, from 3½ to 9 times more than in the model districts. It has been remarked that the larger proportion of deaths has always corresponded with the vitiation of the local atmosphere by the product of organic decomposition, especially human excrement, or the habitual use of contaminated water; and that a diminution of mortality has followed on the improvement of the hygienic conditions of the air and water and the sanitation of the soil (*2nd Report of the Medical Officer of the Privy Council*, London, 1860). This sanitation then will preserve centres of population from simple diarrhœa, which is so frequent in large towns, and will thus diminish the predisposition to choleraic diarrhœa, for it has been observed that every locality where diarrhœa prevails generally is also favorable to the development of cholera.

Another source of infection of the soil still remains to be mentioned, *viz.*, corpses and the mode of *interring* them. Most towns have their cemeteries *extra muros*, but there are still many where burials take place within the town, and even in the churches. It will not be out of place

therefore to recal to mind that to avoid the influence of the putrid emanations from cemeteries, it is necessary to place them at a good distance from the precincts and suburbs of the town, the depth of the grave should not be less than six feet for each corpse.

To the general measures concerning burials, it is necessary to add some more specially applicable to periods when cholera is epidemic. It would be well to remove the corpses of cholera patients from the house as soon as possible, and they should be interred within twenty-four hours; washing them should be avoided, and they should be placed in well-pitched coffins, with the body and bed-linen, without any other clothing, and covered with a layer of quicklime before closing the coffin, which latter should also be covered with quicklime after being laid in the grave. The conveyance of corpses of persons who have died of cholera to an uninfected place should be prohibited.

From the rapid review we have made of the principal causes of the insalubrity of centres of population, we draw the following conclusion:—

The sanitation of towns is an efficacious preventive means to be employed in opposing the reception of cholera, and in mitigating its ravages.

This sanitation should be based chiefly on a variety of measures tending to maintain the purity of the air, the supply of pure and abundant water to towns, and the prevention of the contamination of the soil by organic matter.

Instantaneous disinfection and the immediate removal of excrementitious matter are hygienic measures of the highest importance, especially while cholera exists.

V.

And now we are asked if there are public or private measures of hygiene, measures of sanitation, applicable on such a scale as to enable them to destroy or sensibly diminish the predisposition to choleraic infection. Such measures, we reply, do exist, and we have just detailed the most important. Let them be instituted in accordance with a complete system, and energetically put into execution, and their salutary effects will soon be felt. The sanitation of countries where malarious affections are endemic is always successful in putting an end to them; and almost every locality which has made some slight progress in the path of sanitation in the interval between two invasions of cholera, has experienced, in the second invasion, the beneficial effect of hygienic measures. In this very Report, we have quoted some signal instances of the effects produced in various towns by sanitary improvements in the supply of water, or in regard to the infection of the soil. If even partial improvements give rise to such surprising results, what may we not expect from a general system of sanitation, composed of a harmonious collection of measures well combined and simultaneously and vigorously carried into execution in every country, or at any rate in their chief provinces?

We are aware of all the difficulties of such a vast enterprise, but it will become more and more easy as governments, as well as populations, begin to understand that most endemics and epidemics owe their

violence and their extension only to the crowding together of men, and to the fatal habits contracted in such crowded assemblages. And when the minds of all are able to appreciate this truth, every body will understand also that it is in the power of man—that it is even his duty—to use his utmost efforts to destroy what he created in his ignorance.

We expect that an objection will be raised on the score of the enormous expenditure necessitated by the execution of all these hygienic measures on a great scale; but we have already met this objection: *the disbursement of even the largest sums* (we have said on page 2) *in carrying out measures of health is, simply, equal to laying out money at very considerable interest.* We shall only add here that in one of the countries in which most attention is devoted to public health, and where sanitary enquiries are instituted in all towns where the annual mortality exceeds 23 in a thousand, it is an almost popular proverb that national health is national wealth.

Heretofore we have studied preservation against Asiatic cholera by rigorously *preventive* hygienic measures; we now proceed to consider measures of the same sort which should be adopted in the event of a threatened invasion of the disease, or in case the invasion has actually taken place. When prophylatic measures have been neglected, or when they have from some cause been rendered ineffective, hygiene does not abandon the struggle: it may still aid us in preventing many evils, or, at any rate, in mitigating them.

The provident organisation of *public assistance,* always a pressing duty, becomes an urgent necessity during times of epidemic. This necessity must be provided for beforehand, and every thing must be prepared to diminish as largely as possible the number of victims, as well as to render the result of attacks less fatal.

Home succor is what is needful in regard to the first of these points. It is not only necessary to come to the aid of the poor population with all the means made use of by public beneficence, but it is also very desirable to watch by means of *domiciliary visits,* over the salubrity of dwellings and the state of health of individuals, particularly those belonging to the indigent classes.

These visits are of capital importance. They ought to be *general* and *daily,* as far as local resources permit. The object of these visits should be to seize cholera as soon as it makes its first appearance, and, by that means, even to prevent its further development. Not only would many people be saved by these visits, but the intensity of an epidemic would be weakened, if it could not be quite stifled. The statistics of the epidemics of 1848-49 and 1853 at London, Dumfries, Glasgow, Munich, &c., where this sanitary inspection was established more or less generally, give very satisfactory results. The Commission cannot but recommend the immediate adoption of this system of surveillance, especially in great towns, which are generally the first localities that are attacked and which eventually become centres of propagation.

This measure deserves in every respect the name of *preventive*; but, like all other hygienic measures, its execution should be timely, complete, and conscientious, if we wish to calculate upon its efficacy.

The local administration should make a large and gratuitous distribution of copies of popular *Instructions* containing the principal precepts of individual preservation and of the first remedies to be adopted in case of attack. These *Instructions*, of which, by the way, there are many models extant, should be written in language suited to the comprehension of the people, and adapted to local conditions.

Amongst general hygienic recommendations, the danger of excrementitious emanations should be very specially insisted on. It would not be unreasonable to go so far as to prohibit absolutely the use of common latrines, and to make the general disinfection of excrementitious matter obligatory. This measure, carried out generally in the beginning of an outbreak, and with the greatest care and observance, would be calculated to oppose the development of cholera, especially if it could be completed by the addition of watchful medical visits daily.

The injurious effects of depressing passions, of fear especially, being known, every possible means should be adopted to raise the spirits of the populace by making the most of the confidence which should be inspired by the efficacy of the measures adopted. In connexion with this matter, the question has been raised whether, in an epidemic invasion, it is preferable to conceal the danger, to diminish the real number of attacks and deaths, &c., or frankly to confess the danger, and the extent, whatever it may be, of the ravages of the disease. The Commission places itself on the side of the whole truth: this mode will prevent the abandonment of precautions on the part of individuals, as well as the exaggeration to which the public is but too inclined. The contrary system most often only produces effects diametrically opposed to those which are expected. Moreover, official tabulated statements and other documents are lasting, and are consulted hereafter, and we must try not to furnish false information and incorrect figures to the history and statistics of epidemics. This detailed history is an important document: it is also a duty of the administration to cause it to be written conscientiously, for useful information is always to be drawn from it in regard to present and future epidemics.

By the official publication of the truth, and by the employment of the most rational and efficacious measures, the inhabitants of an infected town will be much more reassured than by the system of disguising what is actually occurring. Full of confidence, they will then lend their zealous aid to the administration, whose proclamations and rules will then have all the authority which is so necessary in the serious event of the occurrence of an epidemic.

The general medical visits, which we have so strongly recommended, would prevent a great number of cases of cholera, and they would also permit of a great number of sick people, even the poorest, being attended in their own homes. For this reason, if the general preventive visits to

houses have been omitted, immediate visits to infected houses should on no account be dispensed with. It is then that medical attentions, hygienic precautions, isolation, and disinfection, may result most successfully.

But at the same time, hospital assistance,—a mode of assistance which cannot be dispensed with,—must be carefully considered.

The hygiene of *hospitals* is sufficiently known to permit us to pass in silence over the general conditions relative to the site, distribution, internal economy, &c., of these establishments. It suffices to call attention to the most salient points in respect to cholera hospitals.

It would be desirable that every large town should have a permanent hospital for epidemic diseases. This hospital should be situated without the town, and should receive the first persons attacked by any epidemic whatever, cholera for instance, persons whom it is often found necessary at present to admit into ordinary hospitals, which there is no time to clear of other patients. Generally speaking, it would be preferable to send cholera patients, whose condition is not yet such as to inhibit conveyance to a distance, to hospitals situate without centres of population; but for patients who require prompt succour, care should be taken, when an invasion of cholera is imminent, to establish small improvised hospitals in the very heart of the city, or in hired houses (and in this case the adjacent dwelling should be vacated) or in barracks constructed with this object in the great squares and places. It is needless to say that when, for want of special hospitals, cholera patients have to be admitted into the ordinary hospital (which, considering the transmissibility of the disease, should be avoided at any cost), they should at least be placed in separate and isolated wards. The conveyance of the sick should be effected in vehicles devoted exclusively to this service and stationed in the larger squares and cross roads.

Common latrines should be suppressed in these hospitals; the *dejecta* should be deposited in special vessels, disinfected on the spot, and carried away twice a day in tubs or other vessels well closed, to be removed far away, buried in trenches, and covered with quicklime.

The soiled linen of the hospital should be immediately immersed in water containing disinfecting substances. As for the bedding, straw pallets are preferable to mattrasses, and the straw should be burnt after having been made use of by a patient.

It is no less indispensable to disinfect immediately the linen and clothing brought with the patients on admission to the hospital. If there are sufficient resources, it would be preferable to burn all the effects of the patients admitted: this latter measure should be applied, at any rate, to the clothing of deceased patients.

As for the attendants on the sick, the Commission recommends that they should be selected, if possible, from among persons who have already been affected by cholera, and in such numbers as to permit of their having frequent relief, to give them some hours of rest (which it would be desirable for them to pass out of the hospital), and to insist upon their maintaining the utmost cleanliness and neatness.

We recommend particularly that the families of cholera patients should not be forgotten, when it is found urgently necessary to close an infected house and to disinfect it; abundant relief and shelter should be given to women, orphans, and invalids: to comply with these demands of public charity and health, we cannot insist too strongly on the advantages of the institution of temporary orphanages and of *houses of refuge* during an epidemic.

As a corollary of these considerations, we lay down that—

A prudent organisation of public assistance—general preventive visits, or, in their absence, medical visits to infected houses—immediate help to those attacked—the publication of popular instructions—the encouragement afforded by confidence in the promptitude and extent of succour and the publication of the true state of the epidemic—as well as the establishment of special hospitals and temporary houses of refuge to shelter the families of poor patients, are very efficacious hygienic and administrative measures in the prevention of the propagation of cholera, and in the mitigation of its ravages in localities that have been invaded.

The transmissibility of cholera being adopted as a principle, the law of propagation to be deduced from it is evident. The Conference has already proclaimed it: *Cholera spreads everywhere in proportion to the facility and multiplicity of communications.* Starting with this law, the hygiene of cholera has studied the general means to diminish as much as possible, on the approach of and during an epidemic, the density of populations and the multiplicity of individual intercommunications resulting therefrom, so as efficaciously to oppose the diffusion of the plague through the heart of a town already infected and the propagation of the disease to localities hitherto uninfected. Hence are derived the advantages which, in this point of view, may result from *emigration, dissemination,* and *removal.*

The temporary *interruption* of all communication with countries, localities, or persons affected by cholera is, of all prophylactic measures, the surest, the simplest, and the first suggested by the very instinct of preservation. But this measure is not easy of execution; it may be applied to an island, to a peninsula not too large, to a restricted locality, to a quarter, or to a particular house; but it becomes impracticable when it is sought to generalise it. The difficulties of maintaining this isolation as absolutely as it should be, and the economical disadvantages which would result from the absolute interruption of communications, are too grave to permit of its always being established with advantage. So that it has been found necessary to modify this radical and decisive measure under the form and name of quarantine. We recommend it, however, in every case in which it can be adopted.

As soon as the absolute isolation of vast choleraic foci becomes an impossibility, we must expect a diffusion of the germ of the disease, more or less to be feared. Now, this diffusion is effected by means of travellers and fugitives, as well as by all sorts of arrivals from infected places.

Amongst the agents by which Asiatic Cholera is disseminated, we must include in the first place those large moving assemblages which may easily remove from one place to another, such as caravans, armies, &c., coming from an infected country, or already infected themselves.

The removal from one place to another of these assemblages is ordinarily a benefit to the individuals composing them, but it is a danger to the countries they traverse or the localities where they stop.

The study of the question of *pilgrimages* having been confided to a special Commission, we have nothing to add here relative to *caravans* and assemblages of pilgrims.

In regard to *bodies of troops* in movement, it is only too well known that they have often been the most active agents in the propagation of cholera: and hence the necessity of refraining, as far as possible, from ordering the march of troops, the relief of garrisons, &c., during an epidemic. It is known, too, how dangerous it is, during an epidemic, to effect the junction of the different divisions of an army, to incorporate recruits, &c.

The special assemblages known under the name of *fairs* have contributed more than once to the rapid diffusions of cholera. The suspension of great fairs during an epidemic would, therefore, very naturally be an excellent preventive measure against its propagation; this measure, moreover, is only too well justified by the instances adduced in the Report of your general Commission in connexion with the subject of the influence exercised by large infected assemblages of men on the development and propagation of cholera.

Up to this point we have considered *dissemination* as the dispersion of the seeds or germs of cholera by large moving assemblages. At present it must be regarded from the point of view of the scattering of every sort of assemblage of men. *Dissemination*, in the first sense, is an evil to places yet uninfected, but, taken in the second acceptation, and in connexion with assemblages invaded, or menaced with invasion by cholera, it may become a great prophylactic measure. This measure for the rest is merely a second derivation from the law of propagation already admitted: the denser the population, and the more multiplied the communications and relations of the assemblage or locality where cholera appears, the more rapid are the diffusion and extension of the disease. There is, therefore, no doubt that everything tending to thin the population and to diminish the number of relations, will result in moderating the propagation of cholera, and in preserving a great number of persons.

Thus, moving assemblages are only benefited by well regulated *removals from one place to another* which improve their hygienic conditions, and by methodical *dissemination* which diminishes the risks of transmission.

This removal and this dissemination seem to have had a very favorable influence, in times of epidemic, on the sanitary conditions of bodies of troops amongst whom these measures were applied. The most

remarkable examples are found in the military stations of India; but in India we find the model of the application of these measures.* In regard to inhabited places, or to fixed assemblages, dissemination commences by free *emigration*. Removal is the prophylactic means which first enters the minds of individuals. In large towns, with dense populations, the emigration of persons, useless, or disengaged owing to their condition, old men and children, may well be encouraged.

This emigration should commence as soon as the epidemic threatens to invade a locality: when cholera has already broken out, and especially when it rages, emigration loses almost its efficacy, becomes dangerous to the places where the fugitives have sought an asylum, and in this case the authorities should make it a point of showing to the public all the dangers of such emigration.

Tardy emigration, in fact, while often being perfectly useless, so far as the fugitives are concerned, may compromise the health of some places yet untainted, and may increase terror within the precincts of the infected town from which the emigrants fly.

The administration, on its side, will favor the effect of emigration by diminishing the deplorable overcrowding but too common in many public asylums and establishments. For instance, to clear out an almshouse placed in bad hygienic conditions, by causing the inmates to pass on to another town or place, or by distributing them between different establishments, to temporarily suspend admissions to a crowded hospital, to thin the population of a penal depôt, or overcrowded prison, &c., &c., are all measures which, while assuring the lives of the emigrants, serve to improve the conditions of those who remain.

* In addition to measures of isolation and disinfection, the establishment of separate hospitals and special latrines, &c., removal and dissemination are the rule in times of cholera for troops in India. The chief official provisions on this subject are as follows:—

1*st*.—A selection should be made beforehand, within a radius of 20 miles around military stations, of all the sites suitable for an encampment of troops on the outbreak of cholera. These localities should be at a distance from the highways, from the ordinary encampments, and about 8 or 10 kilométres (5 or 6 miles) from military stations; the site should be elevated, and afford facilities for drainage.

2*nd*.—If cholera makes its appearance among the troops, and the medical officer in charge of the station declares that there is reason to apprehend that it may become epidemic, (*i. e.*, if two or more cases, for instance, occur in the course of a week after the outbreak of the first case), the troops must leave without regard to time or weather. The local authorities are to decide the degree of dissemination, namely, whether the entire body or only the portion attacked should be removed, or separated, with an interruption of communications between this part and the rest of the troops.

3*rd*.—The body of troops to be removed shall be divided into as many detachments as there are surgeons, who will be brought, if necessary, from neighbouring stations.

4*th*.—The encampment is to consist of tents which, in cholera seasons, must afford shelter to only half the number of men they cover in ordinary times, and the men are to be provided with cots in the rains. The same rules apply to the soldiers' wives and children.

5*th*.—If cholera continues among the troops, the encampment will be removed, when necessary, every two or three days, without fatiguing the soldiers, who must march as much as possible at right angles to the direction of the prevailing wind.

6*th*.—The troops shall not return to the stations until at least ten days after the complete disappearance of the disease in the stations, and after the thorough disinfection of the barracks, hospitals, and other dwellings.

Let us add that while it is necessary to emigrate as soon as possible, it is at the same time necessary to return as late as possible: without this precaution, necessitated by the possibility of an attack some days still after the extinction of the epidemic, there is a great risk of nullifying all the advantages of timely emigration.

Emigration is a species of dissemination to a distance, and is ordinarily anterior to the invasion of the disease; but there is another *dissemination*, which consists in dispersing the population within the precincts of the locality already invaded, or in its suburbs. This dissemination is the complement or auxiliary measure of emigration. When, notwithstanding emigration, the density of the population still remains considerable, it becomes a matter of urgent necessity to apply a remedy by the dissemination of the mass of inhabitants throughout all the available space, without any danger, let it be understood, to the neighbouring localities.

If this dissemination has not been made beforehand, it should take place immediately after, or simultaneously with the emigration, and be applied to poor-houses, prisons, barracks, colleges, boarding schools, furnished lodgings, the dwellings of the indigent classes, public sleeping-rooms, every place indeed where there is any sort of crowding. Overcrowding in times of cholera is a hundred times more dangerous than in ordinary seasons.

As for the mode of application and the details of execution, all these are subordinate to the topographical conditions of the town (number and capacity of empty houses and houses to let, places, squares, promenades, parade grounds, &c.), to local resources, and somewhat also to the season of the year and atmospheric circumstances.

When a site exists in the neighbourhood of an infected town sufficiently large and with the desired conditions of elevation, exposure, good supply of water, &c., *encampments* may be, and have been, established there with some success. These encampments, generally composed of wooden houses, huts, or tents, receive the superabundance of the city population. They may render real service, but on condition that the hygienic and sanitary police of these improvised towns is strict and complete, without which the only result will be new crowding no less dangerous than that what was desired to be remedied. Thus, the chief desiderata to be complied with are, width of streets, ample ventilation, easy drainage, exquisite neatness and order, latrines removed and disinfected, general preventive visits, isolation or a regulated mode of communication.

Dissemination is also applicable to the sick, and to persons in quarantine, by means of the construction of hospitals and lazarettos in the form of encampments. It is scarcely credible how greatly the dissemination of cholera patients, for instance, their isolation, their treatment in the open air, the separation of convalescents, &c., contributes to abridge the duration of epidemics and to result in the recovery of the sick; but always on condition of the strict observance of the fundmental precepts we have mentioned.

From all that we have said above, we draw the following conclusion :—

The temporary interruption of communication with infected places, provided it can be made absolute, is the surest preservative against the transmission of cholera.

Opportune removal from one place to another, and the methodical dissemination of moving assemblages (caravans, bodies of troops, &c.), *are very efficacious hygienic measures adapted to prevent the outbreak of cholera in their midst, as well as to arrest its extension, and diminish its violence.*

Opportune emigration and well regulated dissemination may give rise to the same favorable results in fixed assemblages (localities and public establishments).

VI.

It remains to speak of *disinfection*, a word we have employed and a method we have often recommended in the course of this Report. We must, in fact, destroy infection when we have not been able to prevent it.

In cases of simple infection, of infection by known principles, it is easy to cause its cessation, in the first place by employing the same hygienic means which prevent it, and in the next place by the employment of various active agents of direct destruction.

In cases of choleraic infection, the facility of destroying it is not so great, for the infecting principle is as unknown to us as the rest of specific germs. But experience having taught us that the air is its principal vehicle, that it does not act except within a limited distance from foci of emission, and that it often adheres to certain material objects, we may endeavor to destroy it, to neutralise it, and to drive it away by various means. The choice of these means is the work of experience pursued with ardor, of which the results are far from being discouraging. Notwithstanding all the theories that have been put forward, we do not always know exactly what passes in our processes of disinfection, but we obtain results which lead us to believe that we have destroyed the choleraic miasma, or deadened its deleterious action. It is thus that in our disinfecting operations we find powerful auxiliaries for the diminution in the first place of the receptivity of a place menaced by cholera, for the destruction of the germ of the disease when already imported, and lastly, for the limitation of the extension of an epidemic.

The nature of a simple Report does not permit us to descend to details, but there are some details in this matter so essential that we cannot refrain from giving them. We have, therefore, endeavored to do justice to the subject by means of a summary special treatise, drawn up by one of the members of the Commission (Dr. Mühlig), and annexed as an appendix to this Report.

We can, therefore, confine ourselves here to impressing the supreme importance of *immediate* disinfection on the appearance of cholera. The energetic disinfection of the first choleraic foci results in impeding the development of an epidemic and sometimes in stifling it in its birth.

This is so; and this is our reply to the question whether it is possible to extinguish the first centres of importation. Experience teaches us that this possibility exists, provided these centres are still few in number, and that their complete isolation comes to the aid of measures of disinfection. As for the latter, to be methodical, they should commence, as much as possible, with the sources of emission of the choleraic principle, *i. e.*, with the *dejecta*, linen, &c., of a cholera patient; next should come the room occupied by him, with every thing contained in it and, finally, the whole house.

We hold then, that *disinfection applied to cholera according to a rational method and with perseverance presents itself as a powerful auxiliary;—*

1*st.—In the diminution of the receptivity of a locality menaced by cholera;*

2*nd.—In the destruction of the germ of the disease when imported into a locality; and*

3*rd.—In the limitation, under certain favorable circumstances, of the extension of an epidemic.*

We have now passed in review the entire series of measures of hygiene which may be opposed to the production, importation, and propagation of Asiatic Cholera. They are, for the most part, general, for there is no hygiene exclusively applicable to cholera, but they always succeed in restricting and mitigating it, a double advantage sufficiently proved in all the choleraic invasions of Europe, as well as in the localities themselves where cholera has its permanent centres. We have recommended them because they constitute a very important part of the prophylactics against cholera; because, as the Conference has already laid down, and as we wish to repeat, measures of hygiene are the *essential* complement of measures of quarantine.

A. M. SEGOVIA, *President.*
DR. GOMES.
DR. GOODEVE.
KEUN.
DR. LENZ, *Secretary.*
MALKOM-KHAN.
DR. MILLINGEN.
DR. MUHLIG *(with limitations).*
DR. SPADARO.
VETSERA.
DR. MONLAU, *Reporter.*

Galata-Serai, August 6, 1866.

Appendix to the Report of the Commission on hygienic measures on disinfection as applied to Cholera.

Revised and approved by the Commission.

(By Dr. Muhlig).

Amongst the prophylactic measures recommended against cholera, disinfection has always occupied an important place, especially since opinion has pronounced, rightly or wrongly, that measures of quarantine are powerless against the propagation of the disease. It was thought, therefore, that disinfection, applied methodically and in time, would not only be a desirable substitute for every measure of quarantine, but that it was the true and only method of opposing the propagation of the disease. It will be seen from this of what importance it is to examine this question thoroughly; for if we were indeed in possession of a sure means of opposing the morbification of the choleraic germ, our task would be singularly simplified, and the severity of measures of quarantine might be greatly mitigated; but if we were to find, on the contrary, after an attentive examination of the question that the pretended means of disinfection are simply illusory, that they offer no security, should we not naturally be led to infer that we must look elsewhere, to redoubled severity in the matter of quarantine for instance, for guarantees against the propagation of cholera?

1st.—Importance of the question of disinfection as applied to cholera.

Disinfection is understood in two senses: in the one, the object is to destroy certain organic matter which is considered to be injurious to health, and of which the nature is more or less known already: in the other, the object in view is equally to destroy, in a direct or indirect manner, the morbific germs, whose real nature is unknown, and which only indicate their existence by the effects produced by them in living organisms. Now, in the first case, as we are more or less acquainted with the elements on which we propose to act, we can choose our mode of action with precision and security; thus, suppose, for instance, the confined atmosphere of a room is laden with ammoniacal exhalations, in this case chemistry affords us many means of neutralising the ammoniacal vapors, for example, chlorines, nitric acid, &c., and experience confirms their disinfecting effect. But it is not so in the second case, for here we operate against elements whose existence even is a hypothesis, and our means of action consequently partake of all the uncertainty which still exists in regard to the nature of the morbific germs; it has been admitted, for instance, that chlorines destroy contagion, but nothing affords us any certainty of the fact; contagion does not, like the organic exhalations of which we have just spoken, indicate its existence by a peculiar odor, and consequently we cannot control it by smell. It is true that instances have been quoted where pestilential diseases, prison typhus for example, have ceased to rage after the persevering use of the vapors of chlorine; but daily experience goes to prove, in direct opposition to these examples, in which perhaps coincidence has had most to

2nd.—What is the object of disinfection in general?

do, that contagious diseases, such as typhus, scarlatina, nosocomial gangrene, puerperal fever, &c., continue their ravages in the midst of assembled masses, in hospitals for instance, notwithstanding the methodical use of chlorine or any other disinfectant. There are, nevertheless, certain cases in which, according to the teachings of experience, we may hope to get directly at the morbific germs, if we know their ordinary vehicle or receptacle, provided at the same time it is not atmospheric air, or if we know the place of their germination in the organism, and it is accessible to certain agencies, provided the application of these agencies does not result in any inconvenience to the organism. In the first category we shall cite as an example the stools of cholera patients; in the second, nosocomial gangrene. Thus, in cases of nosocomial gangrene, we know by experience that certain substances, especially corrosive chemical preparations, applied to the parts of the body affected by gangrene, are pretty certain to change the nature of the sores by destroying, probably at the same time with the tissues, the morbific germs, and it would be permissible to allow, therefore, by analogy, the probability of a similar result in other cases also in which the teachings of experience are not yet so conclusive, as, for example, in the case of choleraic stools. But, independently of these more direct means, yet another mode of action upon the morbific germs is admissible by indirect methods; on the one hand, it has been sought to neutralise the morbific action of these germs by favoring their volatilisation; on the other, by diminishing their vitality in subtracting from them the organic matters which are considered, with more or less reason, as the indispensible medium of their existence and development. In fact, ammoniacal emanations play a great part in a great number of contagious diseases, and it is known how they favor the development of typhus, typhoid fever, cholera, &c. In regard to the last especially, M. Pettenkofer thinks that in attacking these emanations, at their very source, we should very probably succeed in rendering the choleraic germ altogether inoffensive. But let us hasten to add that the facts furnished by experience are not yet so numerous as to permit us at present to decide as to the value of this hypothesis.

Whether we make use of disinfection as a simple agent of purification against emanations the nature of which is more or less known, or as a real anticontagious agent, we arrive at this object by two different ways; either we seek to prevent the formation and evolution of the insalubrious and hurtful matter by destroying the source from which it is furnished, as for example when we attack cases of nosocomial gangrene by caustic or other agents reputed to be *antiseptic*, or we set ourselves to work to attack it after its evolution and diffusion in a spot. Frequently the agencies made use of are known to operate in two ways at the same time. We may, however, at present, advance our opinion that the first of these modes of action presents infinitely more guarantees of efficacy than the second.

3rd.—What are the results obtained by disinfection in connexion with cholera?

Before examining the different modes of disinfection, as applied to cholera, it will be well, perhaps, to consider first of all in a general way the question whether it is proved by distinctly conclusive facts that it is possible to prevent the propagation of cholera by the

known modes of disinfection. Unfortunately it must be confessed that the instances where disinfection has been put in practice in a sufficiently continued and sufficiently rational manner are not so numerous as to permit of any conclusion whatsoever being based on them; on the other hand, the few known cases where continued disinfection has appeared to give favorable results always leave the door open to the supposition that they constitute one of those examples of immunity which we must limit ourselves to mentioning without being permitted to explain them. In order to decide definitely upon this question, it would be necessary to be in possession of a very considerable number of facts where the same method of disinfection, having been applied under the same conditions and by competent persons, the result has always been the same; but these facts do not exist, and from those which do exist we can only draw conclusions more or less probable, and which at the same time are not unfavorable to the practice of disinfection. It would appear thus that experience rather comes to the support of the conclusion at which we have already arrived *à priori* by theoretical considerations. Before quoting some of these facts now, we must again observe that modes of disinfection have been applied sometimes before the manifestation of cholera in a locality exposed to contamination, *i. e.*, as really preventive means, sometimes after its importation with the object of arresting its spreading.

The case of the two prisons at Munich has often been quoted as a very decisive fact. Cholera was brought to the prison of Kaisheim by a prisoner who died there. The hygienic conditions of the prison could not have been worse, but the stools of all the prisoners and other inhabitants of the prison were subjected to rigorous disinfection. Now, only one of the 500 prisoners was attacked. On the contrary, in the prison of Ebrach, where no measures of this kind were adopted, of 350 prisoners 15 per cent. perished victims to cholera.

This fact is reported by Pettenkofer.* The same physician brings to notice the case of Traunstein in Bavaria, where it was proved, during the same epidemic (of 1854) that whenever the choleraic evacuations were disinfected by sulphate of iron, the disease contented itself, contrary to the general rule, with its first victim, and a quantity of other analogous examples during the same epidemic has been brought to notice. Thus, Dr. A. Wimmer reports of the result of the disinfection he put into practice while cholera was raging at Landshut. Means of disinfection were adopted in thirteen houses, *viz.*, in nine cases by sulphate of iron thrown into the water-pipes as well as night-stools, and in four cases by chloride of lime. The latter preparation, however, was not made use of to disinfect the latrines and cesspools, but was merely strewn about in the sleeping rooms of the patients and in the corridors as a disinfectant of the air. The time during which these means of disinfection continued in use varied from two to three weeks, with intervals of about eight days. Dr. Wimmer came to the following conclusions: *1st*, the means of disinfection were not applied in these cases until after the first manifestation of cholera or the first death; *2nd*, in every instance where sulphate of

* Pettenkofer Verbreitungs-Art der cholera (Article Kloster-Ebrach), p. 119.

iron was used for the disinfection of latrines and cesspools, no fresh case of cholera was manifested after it was first applied; *3rd*, in those houses where chloride of lime was used in the manner abovementioned, fresh cases were afterwards seen; *4th*, finally, in every house where sulphate of iron was employed in the manner indicated, as a prophylactic, *i. e.*, before any choleraic manifestation, not a single attack of cholera was observed.* In England Mr. W. Budd made use of disinfection with the best results. On the 12th October 1854 cholera showed itself in Horfield barracks, near Bristol, where the disease was raging, the barracks containing five or six hundred men. Mr. Budd was called in on the 13th and found two cases of cholera in the cold stage and two cases of strong choleraic diarrhœa. He immediately recommended the adoption of the following measures: *1st*, the reception of the stools of the patients, if possible direct, in vessels containing a strong solution of chloride of zinc; *2nd*, that the soiled linen should be immediately thrown into water containing the same disinfectant, and that the mattrasses and other articles not susceptible of this mode of disinfection should be burnt; *3rd*, the exclusive reservation for choleraic *dejecta* of latrines into which the stools of the sick have already been thrown; *4th*, the disinfection twice a day of all other latrines by means of the liberal use of chloride of lime and chloride of zinc; *5th*, the examination twice a day of all the men in the barracks in regard to the condition of their intestinal functions; *6th*, to place guards before the latrines, and to treat every man making use of them twice within a brief space of time as a cholera patient; *7th*, to prevent the men from visiting the contaminated surrounding localities until the extinction of the choleraic epidemic. The result of these measures was that, during the course of the following days, eight or ten cases of intense diarrhœa having been discovered and properly treated, no fresh case of confirmed cholera manifested itself in the barrack. On many other occasions, Mr. Budd made use of this method of disinfection, and always with the same favorable result. According to Dr. Cornish, it has been proved that in one of the hospitals at Madras, after choleraic stools were treated by disinfectants, the disease never once spread in the hospital. In the same pamphlet by Mr. Budd, in which these cases are related (Memoranda on Asiatic Cholera, its mode of spreading and its prevention, 1865), a planter of the Island of St. Vincent is spoken of who, by measures of disinfection, preserved his negroes almost entirely from the ravages which were being made in the neighbouring possessions; as soon as cholera appeared amongst them, he placed them under tents and caused the *dejecta* of the sick to be thrown into a trench dug in the earth and furnished with a large quantity of chloride of lime. There is no doubt that in the grounds of this planter the manifestation of cholera was very slight, while the surrounding grounds were decimated and some almost depeopled.

We are now about to pass in review the different methods of disinfection applicable to cholera.

4th.—Means of disinfection.

I. *Ventilation.*—The exposure of contaminated objects to the fresh air has always been rightly considered one of the most efficacious means of disinfection;

* Haupt-Bericht über die cholera-Epidemie des Jahres 1854 im Königreiche Bayern.

we may judge of its utility particularly by the fatal results observed in contrary cases where contaminated articles have been deprived of ventilation and kept shut up when, as experience has taught us, contaminated objects retain for a very long time the property of spreading the disease, as has been shown in the General Report. But it is evident that this method, which should not be neglected in any case, cannot everywhere be applied thoroughly and easily; thus nothing is so easy as to purify linen by exposing it to fresh air, but nothing is so difficult as to sufficiently ventilate the interior of a ship. Moreover, this method is not altogether devoid of danger, unless surrounded with certain precautions, for persons who might find themselves within a certain radius of the place where the objects to be purified are exposed would run the risk of being infected by the choleraic germ evolved from them. As to the time necessary for a complete purification by ventilation, it would depend on several conditions, which could not always be precisely indicated beforehand: for instance, it would depend on the more or less perfect accessibility to the air of the contaminated objects on their texture, and on certain other physical qualities making the morbific germs adhere to them more or less intimately and causing the air to penetrate more or less easily, &c. We think, however, that, considering the pronounced tendency of the choleraic germ to volatilisation (see the General Report), in the most favorable cases, some days, eight at most, would suffice for complete purification. It remains to be added that ventilation would never allow us to dispense at the same time with having recourse to other methods of disinfection wherever they are applicable.

II. *Calorification.*—A greatly elevated temperature has been considered to be one of the best means of destroying the morbific germs, and this opinion is based specially on the observation that certain contagious diseases, like the plague, have never passed the tropics. Nevertheless, in regard to the choleraic germ, it does not appear that a very elevated temperature has the same destroying effect, cholera having manifested itself under all conditions of temperature, and having even appeared to prefer an elevated temperature. Now, in order to be able to rely on the disinfecting effect of heat, it would be necessary to raise it to a degree which would destroy all organic matter: it follows that calorification, to be undoubtedly efficacious, should reach *combustion:* and so the destruction by fire of infected articles has always been put in practice wherever other means of disinfection are not very well applicable. It is very probable, however, that a degree of heat closely approximating to combustion, the heat of an oven for instance, may also destroy the choleraic germ; but hitherto this has been simply a hypothesis, so that we should never confide too much in this method. Dr. Henry, of Manchester, thinks that a temperature above 200° Fahr. (94° centigrade) destroys the morbific germs.*

III. *Immersion in water.*—Prolonged immersion in water certainly disinfects contaminated articles, provided the water is constantly renewed

* Dr. Henry has disinfected the linen of patients suffering from scarlatina by a temperature of 212° Fahr. (100° centigrade); the woollen clothes of the patients were exposed for twenty-four hours to a heat of 144 to 167° Fahr. (62 to 75° centigrade) and worn for 14 days by 56 persons without any injurious result. Parkes' *Manual of Practical Hygiene*, 1866, p. 82.

as is the case, for instance, when the objects are immersed in the running water of a stream or in tow of a ship. It must not be lost sight of, however, that contaminated articles are disinfected by this means only at the cost of the contamination of the water itself, which receives the choleraic germ without destroying it, and that, therefore, this method may, in certain cases, become all the more dangerous in proportion to the larger quantity of contaminated articles and the smaller quantity of water in which they are immersed. Every body knows indeed to what danger washerwomen are exposed by simply washing linen. It has been shown in the General Report that the contamination of the water of a stream may become fatal in many ways, and that the contamination of the sea water of a port is dangerous to ships anchored there, &c. From all this it results that immersion in water, while being one of the most powerful means of disinfection, cannot be practised except under certain conditions and with certain precautions which may easily be discovered from what is about to follow.

IV. *Chemical agents.*—Numerous and various chemical agents have been recommended for disinfection; the most ancient and the most primitive are fumigation by the combustion of certain vegetables, especially aromatic herbs, the evaporation of vinegar, immersion in vinegar, &c. These means cannot be considered as efficacious disinfectants; the first most frequently only disguise the fœtid odors, and the others, like vinegar, act principally by washing and perhaps also by acetic acid; these methods, therefore, can scarcely be reckoned upon, and they can only remain in practice as useful auxiliaries to methods of disinfection.

Amongst chemical disinfectants, that which has enjoyed the greatest reputation and which has attained to almost general use, is *chlorine* evolved in a gaseous form by various familiar chemical processes. People were not content with considering it as a sure mode of causing the almost immediate disappearance of putrid emanations from infected places, but also attributed to it the virtue of destroying all miasma and contagion, and of thus being a powerful prophylactic against the plague, typhus, scarlatina, small-pox, &c. Cases have even been brought forward in which epidemics of prison typhus are said to have been suppressed by the vapors of chlorine. Nevertheless, the exaggerated hopes which attached themselves from the very first to the use of chlorine, were no longer sustained as soon as everyday experience demonstrated that it is only of very limited utility as compared with the great results expected from it in the first moments of infatuation. At present, if it still remains uncertain whether it has or has not some sort of action on the morbific germs, it is at any rate very positive that there is not a single conclusive fact proving that chlorine can prevent the propagation of any contagious disease whatever. As for its action on putrid emanations, it is better supported by proven facts, in this sense that the evolution of chlorine causes the somewhat certain disappearance of infectious odors in confined spaces by resolving itself, in combination with the odors, into inoffensive chemical combinations. Thus it rapidly decomposes sulphuretted hydrogen, ammonia, sulphuret of ammonia, protophosphoretted hydrogen,

&c., but even here we cannot altogether suppress the question whether this disinfecting virtue is not illusory, the strong impression that chlorine exercises on the sense of smell weakening the sensibility of the latter, in other words whether we do not mask one odor by another. To this it must be added that chlorine is a very intense irritant of the respiratory organs, and that consequently it is impossible to impregnate the atmosphere of habitations with the required quantity of a gas which is seriously inconvenient to those who inhale it. The celebrated Guytonian fumigations are simply fumigations by chlorine obtained by the mixture of three parts of sea salt and one part of bioxide of manganese, two parts of sulphuric acid, and an equal part of water. The inconvenience we have mentioned resulting from the vapors of chlorine is, no doubt, one of the causes of its very limited use at present, and chloride of *lime* has been substituted for it in daily use. This preparation is made use of in the first place with the same object of the purification of the air either by causing a rapid evolution of chloric gas by the addition at intervals of small quantities of sulphuric acid or by exposing it as it is in earthen vessels permitting of a slow evolution of the gas. Now, as for chloride of lime as a purifier of the air, we have nothing to add to what we have already said of chlorine, except that its action will be more uncertain in proportion to the more feeble evolution of chlorine. But the disinfecting action of chloride of lime does not end here; it would appear, on the contrary, that the lime which enters into this composition gives it its chief value as a disinfectant employed directly on the objects to be disinfected. In this case it is essential that the latter should be well penetrated by it, which is not possible if the object to be disinfected is itself liquid, or if the chloride is diluted with a certain quantity of water. The *liquor of Labarraque* is a solution of hypochloride of soda made use of for sprinkling the places or objects to be disinfected.

Quicklime is a very useful disinfectant, for, besides its chemical action on organic matter, it enters into them, solidifies them at the same time, and thus prevents the evolution of the emanation. It absorbs with avidity water and the aqueous vapors of the atmosphere with every thing they hold in suspension, without becoming liquefied itself, and evolving a great deal of caloric in the operation. Let us hasten to add, however, that the lime has the great inconvenience of favoring the evolution of ammonia, and that in general it only delays the work of putrefaction without completely preventing it. Lime mixed with water is more generally used, and for certain purposes no other method can be substituted for it, as, for instance, whitewashing. *Charcoal dust* is a very good disinfectant; it absorbs every gas without distinction, and at the same time decomposes some; it promptly attracts the emanation contained in the atmosphere; while still fresh it can take in, it is said, from 15 to 20 times its own bulk of these emanations, and the absorption and decomposition continue for two or three weeks. We shall see further on that charcoal is one of the best disinfectants of sewers. Various combinations of the two last substances have also been proposed as very useful. Thus Dr. Squibb, of Brooklyn, proposes a disinfecting powder composed of two parts of quicklime to one of charcoal, well

preserved in hermetically sealed casks. Thompson's disinfectant consists of six parts of charcoal to two parts of lime, with ashes and salt in smaller proportions. *Dry earth*, especially marly and clayey earth, act in an analogous manner; they destroy bad odors. *Peat* absorbs the constituent elements of ammonia, and thus forms the best disinfectant of urine.

The *mineral acids*, nitric, sulphuric, and hydrochloric, are disinfectants by their antiseptic action. The vapors which are evolved from *nitrous acid* either by adding nitrate of potash to sulphuric acid, or by placing a piece of copper and a little water in nitric acid, enjoy a great reputation and have been cried up not only as purifiers of the air, but also as being true anticontagious agents. However, the irritation they produce in the respiratory canals necessarily limits their use, and, after all, they have only partially justified the confidence reposed in them. Ramon daLuna assures us that nitrous acid has really a preservative power against cholera, and that of those who made use at Madrid of nitrous fumigations not one was attacked. But this negative result would not be of much value till confirmed by experiments made on a larger scale. (Parkes' *Manual of Practical Hygiene*, 1866, p. 85). Smith's method of fumigation is nitric fumigation obtained in this manner: sulphuric acid, water *ana* 15 mix, hold the mixture over live embers and add gradually nitrate of potash 15. This dose may disinfect a space of 120 cubic metres. The same remarks apply to *sulphurous* acid, obtained by the combustion of sulphur. In cases where it may be employed without inconvenience, it is, nevertheless, a useful method to oppose to putrid emanations, and it is of especially easy application, though it is not very certain that it destroys miasma and contagion, as many medical men still believe.

Carbolic or *phenic acid*, which forms the base of *coal-tar* and of the impure *creosote* of commerce,* is an antiseptic which has been largely employed of late. One part of impure carbolic acid is mixed with 50 or 100 parts of water. Lemair has studied the disinfecting properties of this acid: a hole of 2·21 cubic metres in capacity, into which two or three millimètres of coal-tar had been put, was filled with solid and liquid excrement. In a few minutes the odor of the excrementitious matter had entirely ceased, and was not perceptible two months afterwards (in summer). A pail capable of containing 250 pounds of water was smeared on the inside with coal-tar, filled with excrement, and then buried in dung. Six months afterwards no other smell but that of the coal-tar was perceptible. Lemair proposes to impregnate bran with a solution of the acid and scatter the bran about under the bed clothes of cholera patients: but good ventilation must be introduced at the same time. During the epidemic of 1865 at Marseilles, very extended use was made of diluted carbolic acid (1 in 100)

* Carbolic or phenic acid, discovered by Runge, is produced by the distillation of coal-tar; we may add that it is also found in creosote. What is generally sold under the name of creosote is often only impure phenol, but the true creosote, extracted from wood-tar by Reichenbach, has characteristics clearly separating it from this composition, (Malaguti. Lecons Elementaires de Chimie. Paris: 1863, pp. 424 and 440).

for the disinfection of ships. It appears to contain something which bites into the organic part of vegetable fibre, which is easily impregnated by it, and the texture of which it appears to harden. As for iron ships, it has this advantage over chlorine, that it does not exercise the same destructive action on the metal. Carbolic acid enters also into the composition of McDougall's disinfectant, which is greatly esteemed in England; the sulphates of lime and magnesia are mixed with the products of the tar and with impure phenol, and the carbolates of lime and magnesia are thus obtained.

Permanganate of potash is considered to be a powerful antiseptic as well as an efficacious disinfectant, but it is very little used on account of its high price. For the disinfection of the air of apartments, American physicians saturate pieces of cloth with a strong solution of this preparation and allow it to evaporate. It is very useful in purifying water from organic matter by simply adding a few drops of the solution until the tint of the permanganate appears in the water. On shaking it, the water becomes perfectly limpid and inodorous, while the minute quantity of permanganate added, far from having any inconvenient results, rather renders it tonic.

Sulphate of iron is, perhaps, more frequently employed at present than any other chemical disinfectant against choleraic infection, and the results hitherto obtained are rather in its favor. Dissolved in water in the proportion of one to eight, it serves as a local disinfectant by preventing emanations from putrid gases, and thus rendering inodorous the infected matter treated with this solution. What also facilitates its general use is the moderate cost at which it is obtained.

Chloride of zinc is without doubt greatly superior to sulphate of iron. A concentrated solution of this salt thrown upon the organic matter to be disinfected rapidly carries off all traces of infectious odor, and—in which consists its superiority—it destroys all organic matter by its powerfully corrosive action. The only obstacle to its general use is its high price.

Experiments have often been tried with *essential oils*, especially those of turpentine and juniper, as disinfectants of the air, during the recent cholera epidemics. The Bavarian report on the epidemic of 1854 cannot show any real advantage derived from the vapors of the oil of turpentine and juniper whether employed in private dwellings or in hospitals.

We have hitherto enumerated the principal chemical agents employed with the object of disinfection, but these are not all; a host of other preparations of zinc, of iron, of lead, of lime, of soda, of pyroligneous acid, &c., have been recommended, which it would not be futile to consider in detail. It need not be said that theory has not sometimes failed to occupy the principal part in these recommendations. For instance, the theory has been upheld of the disinfection of the air of apartments by assisting the formation of ozone in them, a result

which it was hoped to obtain by the exhibition of bits of phosphorus partly immersed in water. Nobody will trust himself implicitly to this method of disinfection.

The value of all the various chemical agents which we have just partially passed in review is not the same. Those which deserve most confidence belong to the class of caustics which profoundly injure organic matter, as for instance, chloride of zinc. Then follow preparations or substances which neutralise putrid emanations by absorption, such as the sulphate of iron, quicklime, chloride of lime, charcoal, &c. As for the chloride of lime, however, it would appear that its disinfecting power has been slightly exaggerated by relying on its property of very easily destroying colors. Now, those who are in the habit of making *post mortem* examinations, are only too well aware that chloride of lime only imperfectly removes the odor of the corpse from the hands of the operator. It is true it disguises it at first, but after the evaporation of the chlorine, the odor is again very sensible. As for *fumigations*, whatever their nature may be, their value is, no doubt, most open to dispute; for it is very difficult, on the one hand, to cause the gaseous emanations to penetrate everywhere, and on the other hand the efficacy of these emanations is anything but proved.

In general, the chief end of disinfection as applied to cholera should be much less to purify the contaminated air of a focus than to prevent such contamination by acting energetically against the receptacles of the choleraic germ. It is very probable, as we have already observed, that this end is not beyond our means. It is scarcely, however, by the application of one method in preference to another that we will arrive at it, but rather by the intelligent combination of several of the agents passed in review; in other words, by a method of disinfection. We are, therefore, now about to take up the subject of methods of disinfection in their practical application.

5th. Practical application of the means of disinfection.

Disinfection of choleraic dejecta.—It appears well demonstrated at the present day, as has been shown in the General Report, that the choleraic germ is supplied from choleraic *dejecta*, and perhaps vomited matter, and from them alone probably. It is asserted besides as very probable that the germ is not evolved from recent *dejecta*, and that the danger commences at the moment when a certain degree of decomposition and evaporation is established. It follows that it would be of the highest importance to prevent in time the putrid decomposition and evaporation of *dejecta* and vomited matter; a result which may be obtained, if *we subject these dejecta to the action of certain chemical agents at the very moment of their evacuation*: so that the vessels intended to receive the *dejecta* should already contain the chemical preparation, and it would suffice then to agitate the whole mass with a stick so as to allow no portion to escape the action of the disinfectant. The best preparation applicable in this instance appears to us to be a strong solution of chloride of zinc, of which Dr. Budd has made use with constant success. In the absence of this preparation, solution of sulphate of iron

(one in eight parts of water), the use of which is more general, may be employed: M. Pettenkofer adopts this method. Dr. Squibb, in America, recommends that a preparation should be placed in the vessels intended for the reception of the *dejecta*, consisting of salt and the bioxide of manganese, on which a little diluted sulphuric acid should be thrown. He thus trusts to obtain at the same time the disinfection of the *dejecta* by means of the residue of the chlorine, the sulphate of protoxide of manganese and the sulphate of soda which are formed, and finally by the excess sulphuric acid; 200 grains of these salts and half an ounce of diluted sulphuric acid would suffice to disinfect one dejection.* We do not think that this method is worth as much as either of the other two abovementioned, and it is evident that the active evolution of the chlorine may render it altogether inadmissible, especially if the frequency of the evacuations of the number of sick render it necessary to have frequent recourse to it. A simple and efficacious method of disinfecting choleraic *dejecta* is to cover them *immediately after their deposit* with quicklime, but it should be sufficiently abundant to absorb the liquid portions entirely. In carbolic acid, or coal-tar, we have another agent, considered very effective. It is needless to say that if we have the choice of many preparations, we must yet never employ more than one, or chemical combinations would arise neutralising the result already obtained, and *dejecta*, after being disinfected in some way, should never be thrown into latrines which have not previously been completely disinfected, for otherwise the action of the disinfectant, having to be exercised on a larger quantity of excrementitious matter, would, of necessity, be weakened. Let us also observe, in passing, that it is always best to bury the disinfected *dejecta* of cholera patients in isolated places, and with the necessary precautions to avoid the contamination of water.

The disinfection of *latrines and sewers* is effected in accordance with the same principles, but its efficacy varies according to the system of sewers in use, for in fact the only system permitting of complete disinfection is that of movable cesspools. In this case, the empty pans should already contain the preparation preferred, *e. g.*, the solution of the chloride of zinc, of sulphate of iron, or coal-tar, and the same preparation should be thrown into the latrines as often as circumstances require. If it is desired to throw already disinfected *dejecta* into the latrines, care should still be taken always to make use of the same disinfecting substance. As for the system of immovable cesspools, these same disinfectants should be made use of, and they should be thrown into the latrines as often as possible; but in this case one can never be quite sure that the excrementitious matter in deposit in them has undergone the required chemical change, and consequently it becomes necessary, in addition, to prevent the evolution of the putrid emanations which continue to form, by other means, by a supplementary measure, *i. e.*, by casting charcoal dust in abundance into the latrines. But if finally the latrines consist of a system of pipes and tubes, then the

* The Medical Record. New York: May 1866.

same method no longer possesses such efficacy, for it would be altogether impossible to act by chemical preparations on such an enormous quantity of excrementitious matter contained in pipes which have a crowd of intercommunications. Here the best means would be to cause the decomposition and absorption of the emanations which are evolved by large quantities of charcoal dust and quicklime frequently thrown into the latrines. Here again coal-tar would perhaps be found useful in application.

The disinfection of latrines and sewers has been practised not only during the presence of cholera in a locality, but also before its appearance there, as a prophylactic measure, and there are already some facts inclining strongly in favor of this mode of action. The disinfection of the latrines and sewers of a locality should then be commenced as soon as it is threatened with an invasion of cholera, and it should be continued after the manifestation of the disease. Only it would be idle to expect a favorable result if the disinfection is not practised on a large scale: in a word, it should be general. For this reason it is very important that the authorities should instruct the people on the utility and practical application of measures of disinfection, and that they should furnish the poorer classes with the necessary agents *gratis*.

The disinfection of *drinking water* is all the more necessary during an epidemic of cholera, or when an invasion is threatened, if the water is not of the first quality. The best method of disinfection is filtration by means of vegetable charcoal. A solution of permanganate of potash is also recommended as an excellent disinfectant of water, the addition of a few drops only being necessary for the attainment of the desired result. Lastly, water is disinfected by simple boiling, but this method does not appear to us to be always sufficient.

Disinfection of dwellings.—More or less extended, more or less severe measures must be had recourse to accordingly as it is desired to apply the disinfection as a merely prophylactic measure, or to destroy a choleraic focus already in existence. In the first case, measures of ordinary ventilation, a continued disinfection of latrines, and, simply as an auxiliary, chloride of lime contained in small, flat, earthen vessels and exposed in apartments, will suffice to maintain the salubrity of the air. But if a dwelling infected by cholera is in question, while recurring to the same sort of means, we must endeavor to augment their efficacy by more thorough application. Thus, in order to render ventilation more complete, we should not limit ourselves merely to keeping the windows and doors open for many days together and almost continually, but we should also try to establish currents of air by elevating the temperature inside the house by means of heated ovens or braziers of charcoal placed in the different rooms; the disinfection of the latrines should be carried on with still greater perseverance; the entire inside of the house should afterwards be sprinkled and washed, walls, ceiling, and flooring, with a solution of chloride of lime and carobolic acid; after which fumigations should be practised in accordance with the directions of Guyton, or, more simply, by burning sulphur, care being taken to make the

vapors penetrate everywhere, which result will be more readily obtained if the operation is performed in the cellars or at least on the lower flats, the doors and windows being kept close. After having employed these means alternatively and for many days in succession, the disinfection should be completed by whitewashing the walls with lime and washing the ceilings and floors with water copiously used. We think that, on the average, not less than eight days will be required for the complete disinfection of a dwelling contaminated by cholera, for it is never to be forgotten that we are not at all certain regarding the direct action of our agents as opposed to the choleraic germ, and that the principal part to be performed will always devolve upon *prolonged* ventilation. It need not be said that large buildings, barracks for example, are more difficult to disinfect than private dwellings, and that on every occasion measures are to be taken adapted to each particular case.

Disinfection of effects, clothing, and merchandise.—The propagation of cholera by contaminated articles of personal use being a fact proved by experience, the disinfection of such articles should be especially cared for. *Contaminated linen and bedding* should not be given out to wash before having undergone an operation of disinfection. With this object it would be well to have these things immediately immersed in water containing chloride of lime, or hypochloride of soda, which is known not to injure linen in the slightest degree, and to leave them there for at least four-and-twenty hours, after which they may be sent to the wash, in which carbonate of potash and soap should be used, as in the ordinary way. They should be dried in the open air and left exposed to it for the time strictly necessary to dry them completely. For greater certainty the operation may be completed by boiling. The experience of last year in the hospital of the Imperial Marine at Constantinople would appear to be in favor of this method. In the course of the first few days after the appearance of cholera in that hospital, a washerman was attacked by the disease and died. Recourse was then had to the use of chloride of lime in the manner indicated, and from that moment not one of the washermen caught the disease. Dr. W. Budd makes use, with the same object, of a solution of chloride of zinc. But all contaminated articles in domestic use are not equally affected by the chemical agents indicated; some are seriously injured by them, others are too thick or too voluminous to permit of their being subjected to this process. In this case, destruction by fire is the best course, and recourse should be had to it whenever circumstances permit. Straw pallets, mattrasses, coverings, woollen clothing, belong to this category; but if circumstances do not admit of their destruction, they should at least be exposed to the action of very great heat. We have already remarked that Dr. Henry, of Manchester, believes that he has proved that a heat above 200° Fahr. (250° for instance) would suffice for the destruction of the morbific germs. Now, for the purpose of carrying out this operation, well closed rooms might be constructed or ovens heated by hot air conducted through pipes. After having subjected these effects, during 24 hours, to a degree of heat like that just mentioned, they should still be exposed for some days to the open air. In

general, the means of disinfection to be employed in every case will depend in great measure on the conditions presented by the objects to be disinfected. Thus, articles which have been made use of by cholera patients, unwashed linen, dirty clothing, demand the application of the most rigorous means, and especially destruction by fire as often as circumstances will permit; while, in regard to articles presenting themselves under opposite conditions, it will often suffice to expose them to the open air for a series of days. As for clothes, they belong naturally to the first category; it is necessary, therefore, to submit them, like the linen of cholera patients, to the action of chloride of lime or chloride of zinc; and to be more certain still of the result, this operation may be repeated for two or three days, after which they should be exposed to the open air. But, as we have already observed, these operations cannot be applied to every kind of wearing apparel indiscriminately, and it is then especially that it becomes necessary to have recourse to fumigation by sulphurous acid, &c.

The General Report shows that hitherto no fact has been brought forward in support of the propagation of cholera by merchandise, though that it is possible cannot be denied. In point of fact, the contamination of goods, as new articles which have not been used, is not very probable, and prolonged ventilation for some days would then ordinarily suffice to obviate all danger. In certain cases, however, ventilation may be aided by calorification by exposing them to a higher temperature than 200° Fahr. In other cases, if the probability of contamination is greater, to these means may be added, if it can be safely done, fumigation by sulphurous acid in a hermetically closed space, or the goods might be immersed in solutions of chloride of lime or chloride of zinc.

Disinfection of ships.—The measures of disinfection to be adopted in order to prevent the contamination of ships, are sufficiently simple. Extreme neatness, good ventilation through the hatchways, &c., joined to the most scrupulous cleanliness in the well, are all that are there required. The water in the hold should be emptied out every day, but only after its previous disinfection by a solution of sulphate of iron, or by some other disinfectant of equal efficacy and not injurious to the ship. A composition of one part of carbolic (phenic) acid to nine parts of vinegar with a little camphor, has been praised as a useful disinfectant of cabins. But it is not the same thing when the question is to disinfect a ship contaminated by cholera. In this case the disinfection often becomes an excessively difficult operation, particularly when ordinary merchant vessels are concerned, for they most frequently contain the very worst hygienic conditions. M. Mélier, in his memorandum on the yellow fever at St. Nazaire, in 1861, has shown how difficult it is to completely disinfect a ship under such conditions, and what laborious operations must be had recourse to in order to achieve that object. Now, we think that measures of disinfection in regard to ships contaminated by cholera should be based on the same principles which have guided the disinfection of ships contaminated by yellow fever. Nevertheless, we must not lose sight of the existence of an essential difference between contamination

by yellow fever on the one hand and contamination by cholera on the other, a difference which makes us hope that we shall be able to arrive, in our case, at complete disinfection. It is proved by numerous facts that yellow fever adheres with remarkable tenacity to ships and especially to the hold, and that, notwithstanding the perfect health of the crew, a ship may contain the morbific germ and retain it in spite of the measures taken for its destruction. Now, no analogous facts exist with regard to cholera. Instances have indeed been known of epidemics of cholera which have caused great ravages on board crowded vessels, but in the course of some weeks, at furthest, these epidemics have ceased never to re-appear. These facts form a general rule, for we have seen that the choleraic germ is of limited vitality and easy of volatilisation. It does not follow, however, that, under peculiar conditions of uncleanliness, want of ventilation, &c., a contaminated vessel may not retain the choleraic germ for a longer time and become dangerous to persons who have not acquired immunity by a sojourn in a choleraic focus. We would say then that, though the disinfection of ships contaminated by cholera may present itself under the most favorable conditions, it should nevertheless be practised with the greatest care. These measures of disinfection will be more or less rigorous, 1*st*, according to the degree of intensity of the first focus manifested on board; 2*nd*, according to the lapse of time since the departure of the vessel from an infected port; and 3*rd*, according to the degree of health on board. But as these questions more specially appertain to the Commission charged with the study of measures of quarantine, we shall limit ourselves here to some general remarks, so as to pass immediately to the disinfecting operations necessary in cases presenting themselves under less favorable conditions.

Under the most favorable conditions, for instance, in the case of a packet boat of a navigation company, which during its passage, has had no cases of cholera on board, especially if the passage has not lasted for more than 10 days, the preventive measures of disinfection already detailed will suffice. But if cases of cholera have occurred on board during the passage of a vessel which, for the rest, is in a favorable condition of salubrity, the disinfecting operation should be completed by the washing of every part of the vessel, and specially of the hold, with a solution of chloride of lime or of phenic (carbolic) acid, which must be made to act by means of pumps on parts difficult of access, and white-washing with lime, and, if necessary, re-painting. It need scarcely be said that the cabin or other part of the vessel where the cases of cholera occurred demands most special attention in this connexion, and that the linen, bedding, and all the effects of the patients should be treated in accordance with the rules laid down elsewhere. To come now to the most difficult case: Suppose a sailing vessel, laden with merchandise, and in conditions of insalubrity such as they exist in different degrees on board all ships of this class; suppose, moreover, that cholera has raged, and still rages, on board: in this case the disinfected measures should commence with the unloading of the vessel, effected with every precaution necessary to prevent the infection of the persons employed

in the unloading: this operation is called *sanitary unloading*. The first question presenting itself here is this: should not the unloading be carried on by the crew itself without any assistance from persons yet free from infection? We reply affirmatively if cholera no longer exists on board, provided, of course, the number of the crew is not absolutely insufficient: under these conditions, the best course would be to effect the sanitary unloading by the crew itself under the direction of competent persons. But if cholera still exists on board, or if the crew is not large enough to do the work, there must be no hesitation in first of all landing the crew with the object of subjecting the men themselves to disinfecting operations and others necessitated by circumstances. The unloading and disinfection should be effected in places kept free from any sort of communication, the ship being anchored, in the first place, as far as possible from shore. After having thrown a solution of sulphate of iron and of carbolic acid into the hold, as complete ventilation as possible should be established by the opening of all the hatchways, &c., and by putting up ventilating hose and tubes, as well as by the partial removal of the accessible portion of the cargo. Then the decks, sides, and in a word, every accessible part of the vessel, as well as the goods, if their nature will admit of it, should be sprinkled with a concentrated solution of chloride of lime, watering engines or pumps being made use of so as to reach every hole and corner with greater facility. One or two days should then be allowed to pass in order to give full play to the effect of the ventilation, after which the first layer of goods must be unshipped and the second one removed; the places now made accessible must be sprinkled afresh as above, and so on until the complete unloading of the ship. As a general rule, the unloading should proceed rather slowly and by intervals, so as to diminish the danger to the men employed in the work of the unwholesome emanations, unless indeed other imperious causes exist necessitating contrary proceedings. The men just mentioned should be guarded with the minutest hygienic precautions: they should be well nourished and allowed intervals of rest and recreation; they should never pass the night on board; their clothes should be changed whenever they leave the ship after working hours; in a word, they should not be exposed to the focus except for the time strictly necessary for work; the use of *respirators* of vegetable charcoal has also been recommended under these circumstances. As soon as the unloading is completed, the well must first of all be taken in hand. First, pure water, to which may be added carbolic acid or chloride of lime, should be poured into it in abundance. The motion caused by the wind and sea in the vessel, having partly dissolved the filth in the hold, the pumps must be set to work; more clean water must be thrown in and emptied out again, and so on in succession until the water brought up by the pumps is as clean as when it was poured down. The condition of the inner sides of the vessel must then be carefully seen to, and if the space between the inner and outer sides be found to contain organic matter in a state of putrefaction, it must be cleared out, after the injection of chloride of lime or carbolic acid. This is a very difficult operation, which should be entrusted to a ship builder; and it will often necessitate the partial removal of the planking. Finally the disinfection

ishould be completed by fumigations of sulphurous acid, scrapping, washing with large quantities of water, which may be mixed as mentioned above, and whitewashing. In place of scrapping, disinfection by the *flame of gas* has been lately recommended. By means of an apparatus a flame of gas is made to act successively on all parts of the interior of the vessel until a slight degree of carbonisation is obtained: it is no doubt a very efficacious mode of disinfection. The painting of the interior of the vessel in oil may also be employed as a useful adjunct to disinfection. It need not be said that every article found in the various recesses of the ship during these operations should, according to circumstances, be either destroyed or disinfected. In the most extreme case, where the infection is such, that it becomes a doubtful question whether these measures will be of any use, the question arises of the destruction by fire, or of the submersion of the ship. In disinfecting the *Anne Marie*, which became a focus of yellow fever, M. Mélier caused the disinfection of the hold to be preceded by submersion, so effected as to permit of the ship being raised afterwards without danger. At a certain well calculated height in the sides of the vessel, the elevation to be decided by a ship builder, openings are made after bringing the vessel close in-shore; at high tide the water enters through these openings and washes the entire hold, and then partially retires at ebb tide. Now, as the tide comes in twice a day, this washing takes place twice a day, and the ship should be left in that position for several days, after which the openings should be closed as soon as the tide begins to ebb and the ship will easily float again when high tide comes in. The water in the hold should be pumped out and disinfection proceeded with according to the rules laid down. The name of *portholing (sabordement)* has been given to this operation. It is evident that this operation can only be effected in places where the tide ebbs and flows as mentioned above. Now this is not so everywhere, and the measure cannot be carried out, for instance, in the Mediterranean. Let us hasten to add, however, that for reasons already set forth, there will rarely be any occasion to have recourse to such stringent measures in connexion with ships contaminated by cholera. Submersion, moreover, is always seriously injurious to the vessel, under whatever conditions it may be effected, by causing a degree of humidity very difficult to be remedied.

And now, after having studied disinfection in all the details of its application, a word remains to be said regarding the question whether it is possible by this method to extinguish primary foci of importation. Now, positive facts lead us to believe that this possibility exists, provided these foci are still few in number, and that the complete isolation of the foci comes to the aid of measures of disinfection. As for these last, to be methodical, they should commence as much as possible with the source of emission of the choleraic principle, *i. e.*, with the *dejecta*, linen, &c., of a cholera patient; next should come the chamber occupied by him, with everything contained in it, and finally, the entire house.

And here we draw the following conclusions as a corollary of the preceding considerations:—

6th. Conclusions.

Disinfection applied to cholera in a rational manner and perseveringly offers itself as a powerful auxiliary: 1st, in the diminution of the receptivity of a locality menaced by cholera; 2nd, in the destruction of the germ of the disease; and 3rd, in the limitation, under certain favorable circumstances, of the extension of an epidemic.

[*Annexure to Minute No.* 9]*

Report to the International Sanitary Conference on the questions of the programme, relative to the origin, endemicity, transmissibility, and propagation of Cholera, made by a Commission composed of MM. le Comte de Lallemand, le Comte de Noidans and Segovia, *Diplomatists*, and of Drs. Bartoletti, Bykow, Bosi, Dickson, Fauvel, Goodeve, Gomès, Baron Hübsch, Lenz, Maccas, Millingen, Monlau, Mühlig, Pélikan, Polak, Salem, Salvatori, Sawas, Sotto, I. Spadaro, and Van-Geuns, *Physicians*.

Dr. A. Fauvel, *Reporter General.*

Gentlemen,—Before proceeding to detail to you the results of its labors, the Commission thinks it right to let you know how it has proceeded, so that you may be able to appreciate the care it has taken to elucidate the numerous questions confided to it for examination. The Commission in the first place organized itself, choosing Dr. Bartoletti for President, and the Comte deNoidans and Baron Dr. Hübsch for Secretaries. Then, to facilitate operations, it divided itself into six sub-committees or Sections, each having a distinct task assigned to it.

First Section:—President, M. Segovia; Messrs. Goodeve, Polak, VanGeuns; Pélikan, *Reporter.*

The first Section, composed of five members, was directed to reply to the questions comprised in the first group of the programme, on the origin of Cholera; *i. e.*, to elucidate the important and difficult questions of the endemicity and epidemicity of this disease in India.

Second Section:—President, M. deLallemand; Hübsch, Pélikan; Mühlig, *Reporter.*

The second Section was to occupy itself with the facts relative to the importation and transmissibility of the disease: its field of study comprised the three first paragraphs of the second group of questions.

Third Section:—President, M. Sotto; Messieurs Monlau, deNoidans, Sawas; Maccas, *Reporter.*

The third Section was to study more particularly the circumstances of the transmission; how and by what intermediate means Cholera can be transmitted in a word, what are the agents of transmission.

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* The Conference decided in its sitting of the 2nd July (Minute No. 22), that the present Report should be re-printed, the modifications adopted by it being shown in notes.

This Section, in addition, was to discuss the question of immunity, considered with reference to certain countries, to certain localities, and to individuals dwelling in the midst of a choleraic focus.

Fourth Section:—President, M. Gomès; Fauvel, Salem; Lenz, *Reporter.*

On the Fourth Section was imposed the task of establishing the influence of assemblages of men on the violence of Cholera epidemics as well as on the propagation of the disease. It had to enquire into this influence wherever it might exist, on board ships, in lazarettos, in connexion with armies, fairs, pilgrimages, in short in connexion with all assemblages. And on the other hand it had to determine the influence of dissemination under all points of view.

It had also to take in hand the hygienic conditions regarded as concurrent causes in cholera epidemics.

Fifth Section:—President, M. Millingen; Dickson; Bosi, *Reporter.*

The fifth Section had to review all the facts acquired for the purpose of deducing from them, as far as possible, a doctrine in connexion with the attributes of the generating principle of cholera, looked at in a prophylactic point of view.

Sixth Section:—President, Dr. Goodeve; Bykow, Salvatori; Bartoletti, *Reporter.*

Lastly, the sixth Section had to give a general review of the march and propagation of cholera in 1865.

This simple enumeration, which gives an idea of the importance of the numerous questions to be solved by the Commission, sufficiently explains why almost two months have elapsed since its first sitting to the completion of its task. During this lapse of time the Commission has devoted no fewer than nineteen full sittings to the discussion of the partial reports elaborated by the Sections. All the questions proposed have been handled with the greatest care and an entire absence of bias, and with no other wish but that of arriving at the truth by a rigorous deduction from facts. The Commission has never lost sight of the practical end of its studies, and has, therefore, strictly avoided introducing any speculative theories into its discussions. It has not forgotten that its labors should serve as a base to prophylactic measures; and as it is convinced that the greater part of the conclusions it has recorded can, in point of fact, conduce to the application of very important measures, it regrets neither the time nor the trouble it has devoted to their solid establishment.

The Commission did not rest content with the first elaboration, necessarily somewhat incoherent, which resulted from the discussion of the partial reports; it desired that these scattered elements should be reunited, arranged in order, and condensed into a general report, which should be the expression of its judgment, and to which the partial reports, with their annexures, should serve as justificatory documents.

It is this labor of uniformity adopted by it, that the Commission has the honor of submitting to the Conference, a labor which, as may be seen, is the result of three successive discussions.

The Commission is, therefore, not afraid of being accused of having pronounced its judgment lightly and without examination: it is conscious of having proceeded with all suitable deliberation, and if it has not succeeded in solving all the problems placed before it, it is because the present condition of knowledge is not such as to permit of its doing so.

First Group of Questions.

Origin and development of Cholera; endemicity and epidemicity of the disease in India.

If the Commission had been able to solve all the problems contained in this first group, it would have, in effect, attained to the principal object of the Conference, which is to seek out the origin and primordial causes of Cholera, so as to arrive at practical means of circumscribing it and stifling it at its point of departure. Unhappily it is not so. The Commission has, no doubt, been able to reply categorically to many of the questions proposed; but those which it was of the most importance to solve have remained undecided for want of sufficient documents. Nevertheless, even though remaining in doubt on obscure points, the Commission has applied itself to making the terms of the problem the solution of which interests the world more precise than they have hitherto been: and, in this, it believes it has done a thing of great utility.

And here, the Commission thinks it right to announce that it has not restricted itself to the order or the letter of the questions of the programme, the discussion having demonstrated the necessity of introducing into it certain modifications necessary for imparting greater clearness to the exposition.

I.

Whence has Asiatic Cholera originated? And in what countries does it exist endemically at the present day?

To reply to the first of these two questions, the Commission has not deemed it necessary to undertake fresh researches with a view to determine whether the Cholera we see at the present day is a recent or an old disease: all that it will ever be permitted to us to know on this point has, most probably, already been said.

It is beyond question that long before 1817, and even at an epoch dating from the first establishment of Europeans in India, there had been observed in that and some of the neighbouring countries, a disease bearing the greatest analogy to the Cholera of our times, and raging sometimes under the form of violent epidemics. Thus a well known Portuguese physician, Garcia da Horta, showed the existence in India,

since the 16th century, of a disease called *Mordechin* or *Mordexin*, which, according to the description of it, as given by him, was no other than the Cholera, *(communication made by Dr. Gomès)*. But, not to go back further than times of which we have precise knowledge, it suffices to call to mind that in the latter part of the 18th century (1781, 1783, 1791,) several murderous epidemics of Cholera are known to have existed in different parts of India, and sometimes in provinces very distant from each other. Such were the epidemics observed in 1783 in the north of Hindoostan, and at about the same period at Travancore in the south of the Peninsula.

But—what is equally certain and important to note,—is that, after the end of the last century, whether that the disease had become entirely extinct, or that it had escaped the attention of physicians by reason of its not being of much importance, there was no longer any appearance of epidemic Cholera in India, or elsewhere, until 1817. What is also certain is that English physicians (Dr. Tytler among others) who found themselves among the first in presence of the epidemic at Jessore, did not at first recognise the Cholera, which they had ordinarily seen in a sporadic condition, but thought they were dealing with a new disease, a circumstance which would tend to the admission that, in fact, the new Cholera differed in certain respects from the old.

Be this as it may, whether the disease of 1817 was identical or not with preceding epidemics, it is certain that from that time we see a new phase in the history of Cholera. Instead of remaining, as before, circumscribed within the provinces where it appeared from time to time in the form of an epidemic which exhausted itself on the spot, Cholera takes of a sudden an *invading* character.

It gains, from place to place, in every direction, and in a short time diffuses itself through the greater part of India, showing occasionally, in the course of its extensive progress, temporary and passing remissions. It soon steps over the limits of this country, not in one direction alone, but by every issue giving passage to human currents.

For many years this choleraic emission from India kept repeating itself. The greater number of these currents, proceeding in every direction, exhausted themselves in the course of their passage; but finally it found vent by the north-west, and for the first time made its appearance in Europe in 1830.* This epidemic, after having ravaged the world for years, finally became extinct in every spot to which it had penetrated, with the exception of India, and perhaps also some adjacent countries; but in India itself, from the year 1817, Cholera has remained permanently established. Since that time successive observations and authentic documents prove its constant presence, either in an endemic condition in certain localities, or as an epidemic more or less general, sometimes in one, and sometimes in another province: these epidemics being repeated frequently at very short intervals. It was no longer, as formerly,

* In 1823 Cholera had shown itself momentarily at Astrakan.

a disease that might be compared, in ordinary times, with the *Cholera nostras* of our countries, assuming at very distant intervals the form of limited epidemics; it was a disease in many respects new, having foci of emission always in active play, permanent foci whence the disease spread and propagated itself abroad under the form of invading epidemics.

This is what is most important to know; for this is what gives the Cholera of 1817 a peculiar interest for us.

What, in fact, resulted from this new state of things in India? This: that by reason of this permanent focus and the issues from it, countries near or bordering upon India became the theatre of repeated epidemics of Cholera, and that twice already, up to the present day, Cholera has succeeded in finding a way for itself into Europe, not, as has been pretended, by following one fixed direction, but by the routes which suited it best on its passage. It was thus that in 1847 it entered Europe simultaneously by two ways, the Caspian and the Black Seas, while towards the south its course was arrested in Mesopotamia and in the Hadjaz. It was thus again in 1865,—and on this occasion, thanks to the rapid means of transport, it made its appearance in a very short time and by the shortest route,—that it penetrated to the basin of the Mediterranean.

From this simple observation, based on the attentive study of facts, two conclusions are drawn, which are not disputed, viz., that the Cholera from which Europe has suffered at three different periods, had its point of original departure in India, properly speaking, and that since 1817, that country has constantly been the focus from which the disease radiates in every direction. Thus the entire Commission has been able to reply without hesitation that *Asiatic Cholera, that which at various periods has traversed the world, has its origin in India, where it first took its rise, and where it exists permanently in an endemic condition.*—(Adopted unanimously).

II.

Does Asiatic Cholera exist endemically in any place, out of India, at the present day?

Although no facts have hitherto reached us to show that Asiatic Cholera has ever had its point of departure elsewhere than in India, and though it is probable that it does not exist in any other country in an endemic state and capable of giving rise to invading epidemics, yet the Commission has thought it right to establish a distinction between the countries bordering on and near India, with regard to which there are not sufficient data on which to proceed, and those countries where it is incontestable that Cholera has always come from without.

In the first category we find Indo-China, China, the Islands of the Indian Archipelago,* and closer to us, Affghanistan, Beloochistan,

* The Conference adopted the following resolution in its meeting of the 14th June (Minute No. 16):—"The Dutch possessions in Indian Archipelago, with regard to which "there is no suspicion of *endemicity*, should be excluded from the category of doubtful "countries."

Persia,* and the eastern and southern coast of the Arabian Peninsula. In fact, for fifty years, these countries have been the theatre of epidemics of Cholera frequently repeated, which, no doubt, are easily explained by reiterated importations from India; and the Commission admits that this is very probably the case; but as it has been asserted that endemic Cholera has lately manifested itself in certain parts of India, as, for example, at Cawnpore and Allahabad, where it was previously unknown, and as the same thing could very well take place elsewhere, the Commission, in the absence of sufficient data with regard to these countries, has deemed it right to remain in doubt.†

It is not so with what concerns Europe, the Caucasian Provinces, Turkey in Asia, all the north of Africa, and the two Americas. In regard to all these countries, the Commission does not hesitate to declare that Asiatic Cholera—the *invading* Cholera—never took its rise in them. Not a single epidemic of this nature can be cited as having its origin in any place whatever in these countries. On the other hand, it has always been possible to follow, so to say, from stage to stage all the choleraic epidemics which have been observed in these countries; and, in proceeding closer to their source, assign to them an Indian origin.

Doubtless, it has not always been possible to follow, without interruption, the linking of facts, and there are cases to prove that cholera, once planted in a European locality, at St. Petersburg for example, has been able to maintain itself there for several years in succession; but as

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* The Conference decided (setting of 11th June, Minute No. 15) that Persia should be excluded from this paragraph.

† The Conference decided (sitting of 14th June, Minute No. 16,) that here should be added, relative to Persia, a special paragraph thus conceived:

"The Conference does not desire that Persia should be included among the countries "which have just been enumerated; it thinks that this country, on account of its geogra- "phical position, the importance of its relations, and the numerous epidemics of Cholera of "which it has been the scene, merits special mention.

"It is proved in fact, by authentic documents furnished by the Ottoman Sanitary Ad- "ministration, that, without taking into consideration previous periods of which we have no "precise notion, in the space of eleven years (from 1851 to 1862), Persia has been afflicted "with choleraic epidemics during nine years, viz., in 1851, 1852, 1853, 1855, 1856, 1857, "1858, 1860, 1861. It is proved by these same documents that of these nine epidemics, "that of 1851 seems to have been imported into Persia *vid* Bussorah, where it raged at first, "then by several other points in the Province of Bagdad; that in regard to the eight others, "on the contrary, Cholera existed in Persia before invading the Ottoman territory in the "wake of the pilgrims, either by Mohammerah, or by many other points of the frontier, "notably by Khaneguine and Mendeli. It must be added, however, that in three of these "eight invasions, the linking of facts to demonstrate the importation from Persia into Turkey "could not be established.

"In the opinion of the Conference, this frequency of epidemics of Cholera in Persia "does not prove that this disease is endemic there; since from 1862 to 1865, there was an "interval of three years and a half during which no choleraic manifestations were noticed; "it only deserves attention."

At the request of the Persian delegates, the Conference decided in addition (*vide* the same Minute No. 16,) to add to the preceding the three following declarations:— "*First*, that before 1821 Cholera did not exist in Persia; *Second*, that until this time this "disease was not known by any special name; *Third*, that during forty-three years Persia "has transmitted Cholera to Russia only four times."

it does not enter into our plan to treat in this paragraph of the mode of propagation, nor of the causes favoring the tenacity of the malady, we shall confine ourselves to the preceding considerations.

It is needless to say that there is no question here of the disease commonly known under the name of *Cholera nostras*, which, though ordinarily sporadic in our countries, can also exceptionally and in hot seasons assume the epidemic form. It is sufficient to establish the distinction to remark that this disease, under whatever form it may show itself, generally shows neither the same intensity, nor the same symptoms as Indian cholera and, moreover,—a distinctive and fundamental characteristic—an epidemic of this kind has never become a *propagating* focus of the disease.

The Commission, therefore, considers it to be demonstrated that Asiatic Cholera—the invading Cholera—has never developed itself spontaneously, and has never been observed in an endemic state (it is necessary to distinguish secondary foci more or less tenacious) *in any of the countries which have just been enumerated* (Europe, &c.,) *and that it has always come to them from without. As to the countries in the neighbourhood of India, while admitting it to be probable that Cholera does not exist there endemically, the Commission does not believe itself authorised to come to any formal conclusion on the point.*

(Adopted by all the Members of the Commission, except MM. Polak, Sawas, and Van-Geuns.)

III.

Is there not reason to fear the acclimatization of Cholera in our countries?

The reply to this question cannot but be doubtful. In fact, if it is considered that the epidemic which reached Europe in 1847 maintained itself there much longer than the former one, and gave rise in certain localities, at St. Petersburg for example, to secondary circles of a somewhat long duration, it would seem that repeated invasions would be capable of acclimatizing in some sort the principle of the disease; but as we do not know yet on what data to rest in regard to this point in connexion with countries bordering on India, *á fortiori* we are not authorised to admit that it would necessarily be so *in our countries*. For this reason, *the Commission without rejecting the possibility of the fact, regards it as problematic.*—(Adopted unanimously.)

IV.

Is there an original focus of Cholera, permanent or periodic, in the Hedjaz?

The Conference having decided that, having regard to the peculiar importance attaching to it, the question of cholera in the Hedjaz should be studied in an entirely special manner, it was in the first instance shown that the celebrated travellers (Niebuhr and Burckhardt particularly) who visited the country before the invasion of 1831, make no

mention of epidemic cholera, though they speak very explicitly of the diseases prevailing in the country. Moreover, it appears certain that before the said invasion there did not exist in the Hedjaz even a denomination applicable to epidemic cholera.

On the other hand, it is proved from numerous documents, published or unedited, that since 1831, epidemic Cholera has frequently made its appearance in the Hedjaz: thus (to quote only those cases of which we have correct and detailed information) it appeared in 1835, 1846, 1847, 1848, 1859, and the following years until the great epidemic of 1865,* with this distinction, however, that, during the six consecutive years from 1859 to 1864, the disease showed no great development. If to these circumstances it is added that the manifestation of cholera in the Hedjaz has always coincided with the period of the pilgrimage, that the general opinion of the country is that it is always imported by pilgrims from India, and that, finally, on many occasions, and notably in 1865, it is asserted that, in fact, passengers from India attacked by Cholera have arrived in the Hedjaz before the disease had yet manifested itself in the country; the conclusion is arrived at, and it is the conclusion adopted by the Commission, *that Asiatic Cholera does not appear to have any original focus in the Hedjaz, but that hitherto it always appears to have been introduced into the country from without.*

(Adopted unanimously, except by Dr. Goodeve, dissentient.)

V.

Are there in India certain localities possessing the exclusive property of engendering Cholera, or which are more particularly favourable to its development? In other words, is Cholera endemic in all parts of India, or only in certain regions which it may be possible to circumscribe?

It is acknowledged that in India, Cholera does not manifest itself everywhere with the same frequency, nor in the same manner. The observations made on this subject have established the following distinctions:

Cholera reigns by preference as an *endemic* disease, with a tendency to assume, at certain times, an epidemic form, in Bengal in general, but above all in the city of Calcutta, and with less intensity, in the stations of Cawnpore and Allahabad and their environs; and, in regard to the parts of India, at Arcot near Madras and at Bombay.

It shows itself as an *epidemic* disease, appearing *every year, or almost every year,* with more or less violence, in the towns of Madras, Conjeveram, Pooree (Juggurnath), Tripetty, Mahadeo, Trivellore, and other places where there are assemblages of Hindoo pilgrims.

* It is as well to observe that the presence of cholera at Jeddarh every year at the time of the return of the pilgrims from 1859 to 1864, is attested by a report by Mr. Stanley British Consul at Jeddah, during these six years; and is also proved, as regards, 1864 by M de Sainte-Marie, French Consular Agent at the same town.

It appeared again as an *epidemic* disease, but at intermediate times, the intervals of which generally did not exceed four or five years, in the North-Western Provinces of Hindoostan, in 1845, 1852, 1856, 1861, as well as in all parts of the Presidencies of Madras and Bombay, and in Pegu.

It would result then from this distinction that cholera is not endemic except in a somewhat limited portion of India, more especially in the valley of the Ganges, properly so called, and that all the other parts of that vast continent would be, in connexion with cholera, in the same condition almost as countries in the neighbourhood of India, that is, that the disease does not show itself there except accidentally and epidemically, under the influence of causes more or less appreciable.

But that this distinction should have all its importance, and should conduce to a practical result, it was necessary to establish it with precision. Now this is not so. To say that cholera is endemic in the valley of the Ganges and in the Delta formed by this river and the Brahmapootra, without indicating, otherwise than has been done, the places in this vast extent possessing the property of endemicity, is to leave the question in a haze from which nothing positive can be concluded. The Commission hoped to receive official documents which would serve to clear up this capital point in the subject of the causes of cholera; but it has not received them, no doubt for want of time to prepare them and send them from India. It can, therefore, only bring to notice this important lacuna.

It would not even suffice to know precisely the localities where Cholera now-a-days rages perennially; it would be necessary still to know whether there are places whence the disease has disappeared since it has been studied; if there are any where it has disappeared as an endemic to be renewed; and, lastly, what are exactly the localities where the endemic nature of the disease as it exists, is comparatively a new fact? And again, is it certain that Cholera is not endemic except in the circumscribed localities indicated; and is there not reason to suspect that it is so in some of those places of pilgrimage where cholera takes an epidemic form every year?

From the more or less categoric nature of the reply to these questions, we should find indications by which to arrive at the conditions of the origin of the disease, and to the prophylactic measures to oppose it.

However, the exact knowledge of the endemic foci of the disease would still be insufficient: it would be necessary to add that of the principal epidemics which have raged in India since 1817, with an indication, as precise as possible, of their point of departure, so as to see whether these epidemics have or have not had their origin in a focus of endemic disease, or by the effect of transmissions from this focus. It is probable that on this question the Indian archives might give us some decisive and clear information. Finally, it would be interesting to know if, in India, there are regions or localities which, up to the present moment, have shown themselves refractory to the propagation of cholera.

In aid of all these notions, it would, perhaps, be permitted to establish what we may already be supposed to know, namely, that in India there is but a small number of endemic foci of cholera, whence have emanated the epidemics which have ravaged that country first and then the world.

For the present the Commission can only reply *that there are in India certain localities, comprised principally in the valley of the Ganges, where cholera is endemic, without its being possible to specify them all, or to affirm that they have the exclusive property of giving birth to the disease.*— (Adopted unanimously.)

VI.

Do you know the causes by the concurrence of which cholera has its birth spontaneously in India, as well as the circumstances making it assume an epedimic form?

If it is incontestable that cholera does not exist endemically in India, except in certain circumscribed localities more or less well determined, it is there, and not elsewhere, that it is necessary to seek out the circumstances which can give birth to the disease or produce endemicity. Now either from no continuous research having been devoted to the subject, or from the difficulty of the problem, or from some other motive, it is positive that it has not been found possible as yet to fix the circumstances in a satisfactory manner.

Hypothesis, however, have not been wanting. The principal consists in attributing the endemicity of cholera in Bengal to the alluvial Delta of the Ganges and Brahmapootra, alluvial lands rendered particularly deleterious, under a burning climate, by the fermentation of animal and vegetable detritus with which the soil is impregnated. Under this supposition, endemic cholera would be the result of certain emanations from the marshy soil. It is added that the traditional custom of the Hindoos casting half-burnt corpses into the sacred river can explain the privilege of endemicity of which the delta of the Ganges may be possessed. Lastly, some persons, and among others Dr. Bonnafont,* believe that they can account for the permanence of cholera in India and for the greater frequency of the epidemics since the close of the last century, and notably since 1817, by the ruin of the great hydraulic works executed by the ancient possessors of the country, which had for their object the collection, the distribution, and the easy flow of the water, the ruin being due, according to some passages extracted from a book written more than 20 years ago by Count de Warren, and others taken from an English journal of the same epoch (*India News*, 1844), to the neglect and want of care of the East India Company, and which must have had for result the insalubrity of countries until then comparatively healthy.

All these assertions, which tend to nothing less than to determine precisely the cause of cholera in India, and which appear to enjoy a certain amount of credit in Europe, have been the object of attentive examination by the Commission.

* "Le Choléra et le Congrès Sanitaire." Paris: 1866.

To the hypothesis which attributes the origin of cholera to the alluvial Delta of the Ganges, Mr. Goodeve, to whose opinion a long sojourn in India gives great authority, replies that, in India, other rivers beside the Ganges show analogous alluvions, and yet, for all that, cholera does not rage, as a consequence, endemically on the soil washed by them. Such is the Irrawaddy in a neighbouring country, an immense river, whose delta, however, has not the same property as that of the Ganges, and where cholera appears only from time to time under an epidemic form; no doubt, the alluvions of the Ganges are for Bengal, as similar alluvions are elsewhere, a great cause of insalubrity, which may up to a certain point favor the manifestation of cholera, but cannot explain its origin. In regard to the human bodies cast into the current of the river, Mr. Goodeve, agreeing in this with M. de Valbesen, formerly Consul-General of France at Calcutta, sees in the matter only a morbific influence whose importance has been exaggerated; and moreover, it is not to be forgotten that this custom goes back to time immemorial, while the permanent existence of cholera on the banks of the Ganges is a new fact.

Finally, in regard to the explanation founded upon the assertions of M. de Warren, Mr. Goodeve declares it to be utterly contradicted by the facts. In the first place the canals which had been spoken of had been destroyed, or had ceased to work, long before the English domination in India, and in the second place they existed principally in the Carnatic in the south of the Peninsula, and not in the Delta of the Ganges and Brahmapootra, where the cholera of 1817 originated. This Delta has never had any of these hydraulic works, and the rivers there have flowed for centuries under the same conditions. Those who believe in the possibility of rendering this region healthy by works of this nature would do well to study the question on the spot; they would see, at the period of the great harvest, in September, with what force these wide and deep rivers, fed by a multitude of affluents, rush towards the sea in an immense number of mouths, over a space of more than a hundred miles in width; they would every where see the very small elevation of the soil, and the immense territory to be drained, and then, perhaps, they would understand the difficulties of such a work to obtain a result, moreover, very problematical, *viz.*, the extinction of cholera, which result would more probably be obtained by hygienic measures applicable to the manner of living of the population. It is in this view, adds Mr. Goodeve, that the three permanent Sanitary Commissions of India already work.

In regard to the destruction of canals and dykes, Mr. Goodeve demonstrates, according to an article in the *Edinburgh Review* of January 1864 based on official documents, that in the Carnatic and the north of Hindoostan, the destruction spoken of goes as far back as the decadence of the great Mahomedan Empire, and after that to the wars of the Mahrattas against that empire, and, consequently, long previous to the English domination, which has only inherited ruins already existing. As to the canals of the north of India, and those of Delhi in particular, they had ceased to work beneficially from the middle of the last century, and far from having been ruined by the neglect of the English, those of

Delhi have been restored and augmented under their administration by works commenced in 1808 and finished in 1822. In every province the English have been obliged to recommence canal works *de novo*, and the sole reproach that can be urged against them is that, absorbed by war and politics, they have proceeded with a series of reproductive and beneficial works with imprudent slowness. Amongst the great works of canalisation undertaken by the British Government can be mentioned, in addition to those alluded to above, the *Eastern Jumna Canal*, 150 miles in length in its principal course, and having 500 miles of branches and outlets, irrigating 58,287 hectares (143,896 acres), and the *Western Jumna Canal*, which has a main length of 445 miles, without reckoning branches and outlets, and which has given life and fertility to a vast extent of territory hitherto sterile and depopulated. But, above all, must be mentioned the *Ganges Canal*, a gigantic and exclusively British enterprise, with a main length of 1,437 kilomètres (893 miles), to which in the month of May 1862 had been added 2,963 kilomètres (1,847 miles) of branches, without reckoning secondary conduits. In addition there are to be enumerated the great works, by means of which the principal rivers in the south of the Presidency of Madras have been ameliorated in their course and diverted for the irrigation of the fields. These works were commenced in 1836, and consequently before the date of publication of M. de Warren's book.

By this simple review, which might be still further developed, Mr. Goodeve hopes he has demonstrated—and the entire Commission is of his opinion—how unjust is the opinion which accuses the East India Company of having allowed the ancient hydraulic works to fall to ruin, and of having done nothing itself in this way for the sanitation and fertilisation of the country. The truth is that many years before the publication of M. de Warren's book, hundreds of thousands of canals had been undertaken and restored in the Presidency of Madras and in the north. In fine, Mr. Goodeve thinks he has proved, and the Commission thinks so with him, that the development of epidemic cholera in India cannot be attributed to new conditions of insalubrity due to the negligence of the English administration.

The Commission has not thought proper to stop at the other hypotheses which might explain the origin or endemicity of cholera by hygienic conditions which are met with in the same degree in those parts of India where it is endemic as well as in those where it is not. The moment it is asserted that the endemic condition is peculiar to certain parts of India, although these parts have not been shown with sufficient precision, and although it may be maintained, in addition, that this circumstance is in some sort a new fact, *it follows of necessity that this cholera, established permanently a short time since, must be referred to some new and special circumstance in those localities*. Now, as has been said above, no new or special circumstance has as yet been shown to exist in the delta of the Ganges since cholera has been established there endemically. And nevertheless the whole question is in that. *The permanence of the disease in certain places cannot be explained by successive transmissions, but only by something inherent in the places themselves.*

As for the alluvial deltas, the climate, hygienic habits, misery, &c., it is evident that all these morbific causes cannot be cited here except as auxiliary circumstances.

The problem of the origin of cholera cannot then be solved except by a patient and attentive enquiry made on the very spot where cholera is endemic. Certainly, it is impossible to foretell the result of such an enquiry, or whether it would ever arrive at a solution of the problem; but it may be affirmed that something useful would result from it in connexion with the prophylactic measures against cholera.

In the mean time the Commission should confine itself to replying that *we do not know the special conditions under the influence of which cholera is originated in India and stays there endemically in certain places.*—(Adopted unanimously.)

VII.

What are the circumstances which conduce to the development and propagation of epidemics of cholera in India?

As to the second part of the question, namely, what are the circumstances which, in India, concur in producing epidemics of cholera, we are further advanced. No doubt the problems relative to its epidemic nature in India have not yet been solved, but our acquired knowledge permits us to indicate a certain number of circumstances whose action is incontestable. It is in the sources or in the immediate neighbourhood of the foci of endemic cholera that it is necessary apparently, above all, to study the causes which appear to favor its epidemicity, for it is there that documents show us principally its epidemic tendency; not that it follows from this that in these places the epidemics are severer than elsewhere,—the contrary would rather be the rule, no doubt, on account of a certain acquired immunity,—but because it appears that there the causes of its epidemicity should become more evident. It is not so, however, because in Lower Bengal for instance, in the absence of precise ideas as to the places which have the exclusive property of endemicity, the endemic and the epidemic state are so mixed up together that it is impossible to analyse the conditions which favor the one or the other condition.

Moreover, the special part which one would be tempted to assign to causes of insalubrity, such as those which result from the alluvial deltas of the Ganges in Bengal on the epidemic development of cholera, would be contradicted by the fact that this development takes place as well under totally different conditions of soil and climate.

This only can be affirmed with reference to this subject that, in Bengal, cholera assumes the epidemic form, particularly during the hot season, from April to August, while it is otherwise in the Provinces of the North-West, where the greatest epidemics (notably that of 1861) have raged more especially during the month of July and August, and have terminated at the commencement of winter. At Bombay things are much the same as they are in Calcutta, that is to say, cholera epidemics generally rage there from April to September.

In the Presidency of Madras, where the seasons are less sharply defined, it is also in the hottest period of the year that cholera shows itself epidemically with the greatest intensity.

Lastly, the great manifestation of cholera of 1817, which, it may be said *en passant*, did not have its principal point of departure, but only its principal focus, at Jessore (it being proved by official documents of the period that, many weeks before it broke out at Jessore, the disease had already been ravaging two places very distant from that town, one, Chittagong, on the Gulf, 50 leagues to the east, and the other, Patna, on the Ganges, 100 leagues to the north-west of Jessore); this great manifestation, we say, of which the cholera of the present day is the interrupted succession, also commenced in the hot weather. So that it is impossible not to admit that in Bengal, as well as in the generality of India, and, for that matter, every where else, the hot season exercises a favorable influence on the epidemic development of cholera. But this is only an auxiliary circumstance, subject to numerous exceptions; it is impossible to find, even in India, a *sine quâ non* condition for the epidemic development of cholera; *à fortiori*, this circumstance, considered by itself alone, cannot be regarded even as the cause of the epidemicity.

The Commission does not think it necessary to take up a crowd of conditions more or less favorable to the epidemic development of cholera in India; nothing would result from the discussion which would not be applicable to many other diseases, and which would be but of secondary interest. The Commission hastens to arrive at those circumstances whose special action is otherwise very evident: we mean the great *assemblages* and *migrations* of men, and particularly the *pilgrimages* made at stated times to different places in India.

It has been seen above that cholera raged with more or less intensity in an epidemic form, almost every year, in those places where Hindoo pilgrims were gathered together. Amongst these places, some of which are at the same time places of worship and fairs, some of the most holy are Hurdwar, Ramdeo, Muttra, Ajudhia, Allahabad, Mirzapore, and Gya in the northern parts of India; Balasore, Mahadeo and Juggernath (near Pooree) more to the south; Trivellore, Tripetti, Conjeveram, Seringham, and Ramiseram in the Presidency of Madras; Dakoor, Kodunpore, Sholapore, Sungum, in the Bombay Presidency.

It will suffice, to give an idea of these assemblages, to say a few words about Hurdwar, Juggernath, and Conjeveram, which are about the most important among the places of pilgrimage, the number of which is very considerable.

Hurdwar is in the north of Hindoostan, situate on the Ganges, on the spot where that river quits the mountains to commence its course in the plains. The fair is held every year at full-moon in April, and every 12 years a pilgrimage to this place is reputed to be more than ordinarily efficacious, so that at this time the gathering is enormous. It is stated that in 1783 more than a million people were assembled there,

when cholera broke out and 20,000 individuals perished in the space of eight days; it is added that on the termination of the fair, after the crowd had dispersed, the epidemic died away without propagating itself, without even attacking the village of Jamalpore, only a few leagues distant. It is not so ordinarily at the present day. At present cholera shows itself at Hurdwar almost every year on the occasion of the fair.

Juggernath, on the coast of Orissa, towards the north-west of the Gulf of Bengal, is one of the most sacred places. The ceremonies take place in the months of June and July. The town of Pooree, which is in the neighbourhood, and which in ordinary times numbers 35,000 souls, has its population, during the fêtes, augmented by 100 to 150,000 people, and, according to certain authors, even a great deal more.

Cholera breaks out there every year two or three days after the gathering of the crowd, and ceases only with its dispersion after the ceremonies.

Conjeveram is 45 miles to the south of Madras, and receives every year, during the month of May, at least 200,000 pilgrims. The ceremonies last ten days. Dr. Montgomery, in his interesting recital (*Medical Times and Gazette*, January 1866) says that in ordinary times the conditions of health of the town of Conjeveram are not bad, but that it is not so at the time of the pilgrimage, when cholera breaks out every year. He adds that in 1864, the Government having commenced to adopt hygienic measures (the removal of dirt, the establishment of latrines, the sending away of cattle, abundance of drinking water, &c.,) the pilgrimage passed over without cholera. It is true, he remarks, that in that year there was very little cholera in the south of the Presidency; but, he adds, as a result of the same precautions, Conjeveram again remained untouched by cholera, although the season was very unhealthy.

What happens in the places above mentioned occurs in almost every sacred place. The pilgrims congregate from all parts, and, often after a journey of many hundred leagues almost always made on foot during the hot season, arrive at their destination exhausted by fatigue and misery. Once in the holy towns, their miserable condition is aggravated by a horrible crowding, by all the causes of infection resulting therefrom, by bad nourishment, bad water, debauchery—in a word, by a multitude of circumstances tending to the development of cholera amongst them. Then, at last, when these crowds have dispersed, they go about carrying cholera every where with them in their journey, and thus become the agents, more or less active, for the propagation of the epidemic.

In these descriptions, which are the result of observations made principally within a few years past, do we not find, *on a larger scale*, the exact representation of what passes at Mecca? Here, as at Mecca, cholera does not break out with violence till some days after the assemblage of the pilgrims, and it disperses and propagates itself in all directions with them. Pilgrimages in India, as at Mecca, would then at

the same time be augmenting and disseminating foci of the disease. There is, however, one important feature wanting to make the resemblance complete, or rather the existence of this feature, which seems to be wanting, has not yet been incontestably demonstrated. At Mecca it appears well established that cholera is always imported. Is it the same as regards assemblages in India? or rather does the disease develop itself there spontaneously without any prior importation?

It is to be remarked that the localities in question are not considered as foci of endemic cholera; cholera dies away there after the departure of the pilgrims; and reappears, more or less periodically, only on the occasion of the pilgrimage. It would be very important then to seek to know, by making careful enquiries, whether cholera is or is not always imported into places of pilgrimage by individuals coming from endemic or epidemic foci. In the meantime, if we are to judge by analogy, *the probability is that in India, as everywhere else, beyond the limits of endemic foci, the importation of cholera is the necessary condition of its epidemic development.*

Be this as it may, after what has been said, it is impossible not to admit that in India the pilgrimages have a most important influence on the development and propagation of choleraic epidemics. Then come, but in a much smaller degree, the movements of troops, as they have been observed principally in the Presidency of Madras.

Lastly, if to these causes be added the growing facility of rapid communication, whether by railroads or by steam vessels, is there not reason to fear a growing frequency and a more and more rapid extension of epidemics of cholera in India, and consequently a danger of equally increasing importation into Europe?

The Commission, then, believes itself authorised to reply that *pilgrimages are, in India, the most powerful of all the causes which tend to the development and propagation of epidemics of cholera.*—(Adopted unanimously.)

Second Group of Questions.

Transmissibility and Propagation of Cholera.

In regard to this group, as to the preceding one, the Commission has not thought it necessary to restrict itself either to the strict order or the letter of the questions laid down in the programme: it has thought it better to present facts, as well as the deduction drawn from them, in their natural order.

VIII.

Is the transmissibility of cholera proved in the present day by facts admitting of no other interpretation?

The transmissibility of cholera is at present a fact so well known to science, that it has seemed to many persons almost superfluous to demonstrate it; but the immense majority of the Commission thought

that this demonstration might not be useless either in convincing some incredulous people who are in want of illumination, or, at any rate, in showing that the Commission has pronounced its judgment with deliberation and full knowledge.

The transmissibility of cholera is proved—1st, by the progress of the epidemics considered in general; 2nd, by well established facts showing the propagation of the disease after its importation; 3rd, by the evolution of the epidemics in the infected localities; 4th and last, by the efficaciousness of certain preventive measures.

1st.—Proofs drawn from the progress of the epidemics generally considered.

From the time of the appearance of the first epidemic of cholera in Europe, it was already remarked that the disease preferred to follow the great ways of communication, navigable rivers, frequented routes, and masses of men in movement. Later epidemics have only confirmed this observation; like the first, it has been found possible to follow them, as it were, step by step, from their place of origin in India till their arrival at some point or other; and whether, as in the first two invasions of Europe, the disease has followed the land route, or whether, as in 1865, it has more especially preferred a sea-passage, the law of propagation has remained the same, that is to say, the extension of the disease has always taken place in the direction of the human currents which have set out from a place where it was raging.

Cholera has never, in its progress, preferentially taken, as believed by some, a fatal direction from east to west; but, on the contrary, it has radiated and radiates in India in every direction, to the south as to the north, to the east as to the west, spreading itself everywhere in consequence of the facility and multiplicity of the communications. Those who think otherwise, have not studied the facts and reason as the Chinese would do, who pretend that cholera invariably proceeds from west to east.

This law of propagation by purely human currents has never been supported by better evidence than by the epidemic of 1865.

Imported by pilgrims arrived from India, it broke out at Mecca during the festival of the Courban-Baïram in May; it followed the pilgrims in their return viâ Egypt and appeared at Alexandria in the early part of June after the arrival of the pilgrims from Suez by railway. Now, did the cholera take a single direction from Alexandria, which rapidly became a vast focus of admission? No; it radiated in every direction with which there was communication by steam. It soon burst forth almost simultaneously at Beyrout, Sapurna, Constantinople, Malta, Ancona, and Marseilles, that is to say, at the termini of the principal human currents leaving Alexandria; while it did not show itself, at the time, on any of the other points of the littoral. These ports, once invaded, became in their turn new foci of emission, whence the disease spread itself on all sides, but always by the great ways of communication; and it was then that the railways became, as we shall see further on, a means of rapid importation to great distances.

This is not all: while the epidemic radiated thus on the side of Europe, on the other side it returned, as it were, on its own steps in the track of the Javanese and Persian pilgrims leaving Mecca. The return of the Persians was signalised by the breaking out of the disease at Bassora, in the Persian Gulf, and there is reason to believe, from information communicated by our honorable colleague, Dr. Van-Geuns, that it must have been re-imported into Samarang (Java) by the Javanese pilgrims.

This march of the epidemic in 1865 is so distinctly marked, that it has cleared away many doubts; but still analogous facts are not wanting in previous epidemics, and in order to show how greatly the direction of choleraic epidemics is subordinate to that of human currents, let us recal the memorable fact of the importation of cholera (in 1854) to the East, and its communication to the French army by vessels from Marseilles with troops on board, who had come from the neighbourhood of places where cholera had been raging.

In support of this same law, the constant fact can be cited that every time that cholera has shown itself in an island, or has attacked America, it has always been in a maritime town, ordinarily in a chief port, and not in the interior of the country, that it broke out first: thus in 1832 at Quebec, and in 1848 at New York and New Orleans. It is therefore a feature common to all choleraic epidemics observed up to the present day that they have constantly followed man in his migrations from an infected to an untainted place.

This common feature, which shows us the principle of cholera always attached, so to say, to man, and not travelling except with him, is still further corroborated by the circumstance, well-worthy of attention, that the swiftness of choleraic epidemics, coming to us from India, has been increasing with the growth of communication, and above all with the acceleration of means of transport. It will suffice, to be convinced of this, to compare the march of the two first epidemics which came overland, animated by an unequal speed and often impeded by the difficulties of the route, with the prodigious rapidity—*a rapidity, however, not greater than that of the means of transport in use*—of the passage made by the epidemic of 1865, which, leaving India at the end of winter, or, leaving Mecca at the end of the month of May, was able to arrive in America in the course of October, after having traversed France, without reckoning the places to which it penetrated on various sides, in England, to the heart of Germany, and in Russia,—thus, in the course of its long passage, from India to America, passing over half the circumference of the earth in the space of nine months, and coming from the holy places of Islamism to Paris in three months and a half.

Do not all these facts demonstrate most strongly that cholera is propagated by man, and with a greater swiftness in proportion to the greater rapidity and activity of his own migrations? The Commission does not hesitate to reply in the affirmative.—(Adopted unanimously.)

2nd.—Proofs deduced from facts establishing the propagation of cholera by importation.

If, from this first order of proofs, very convincing to any unprejudiced mind, we proceed in search of facts which incontestably establish the transmission of disease by the arrival of articles from an infected locality in a place until then healthy, we shall find ourselves embarrassed in our choice. It is to be distinctly understood that only those facts are meant which can receive no other reasonable interpretation. The Commission will content itself with some examples of this sort; for the question at present is merely to prove that cholera may be transmitted by importation.

These incontestable facts are not to be sought for in the great populous centres of the European continent where the relations between individuals and movements to and fro are so multiplied and intricate that it is almost impossible to deduce from them a strict linking of circumstances; conclusive facts are furnished principally by small places and by those seaports where it is easy to place arrivals under control. In this point of view, the present epidemic is fertile in proof.

But before coming to recent facts, the Commission remembers that Dr. Jukes, in a report to the Government of Bombay, had already said in regard to the Indian epidemic of 1817: "Nobody can have failed "to see that the disease followed the great roads of the Deccan to Pan- "well, and I am not acquainted with a single village in the Concan "which was attacked by the disease without having been visited by "persons coming from some one of the infected places."—*(Report of the Medical Board of Bombay,* 1819.)

The Commission thinks it right also to draw attention to the well known and characteristic fact of the English frigate *Topaze* which, in 1859, coming from Calcutta, brought the cholera to the Mauritius. It will confine itself to mentioning, in addition, the importation, in 1832, of cholera from England into Holland; at Scheveningue, a small village about half a league from La Haye, by a boat *(Kiehl* 1865*)*; at Quebec during the same year by emigrants from England; in 1832 at Porto, by a troop ship from Ostend, and which had touched at some place in England *(Gomés)*; 14 very conclusive facts communicated by Dr. Pélikan relative to the epidemic of 1847 in Russia; another manifest case of importation into Sebastopol, in 1848, by a ship from Nicolaien *(Pèlikan)*; in the same year the importation of cholera into New York and New Orleans by emigrant vessels from Hâvre; its importation, so clearly demonstrated in 1849 at Nogent-le-Rotrou, by nurses and their nurslings coming from Paris *(Brochart: Mémoire présentè á l'Acadèmie de Médicine,* April 13, 1850; and in 1853 in the arrondissement of Montargis, under the influence of the same circumstances, by Dr. Huette *(Archives Generales de Mèdicine)*; in 1854 the importation, before spoken of, of cholera into the East by troop-ships from Marseilles; in 1853 its importation into Vigo by a ship from the Havana, and in 1855 into the island of Fogo,

one of the Cape Verd Archipelago, by a Sardinian emigrant vessel from Savona bound for Monte Video; the following year into Madeira by a troop-ship from Lisbon *(Gomés)*.

Without dwelling upon facts already published, nor upon many others of the same kind and equally known to science, the Commission prefers to limit itself to less well known or unpublished facts in connection with the last epidemic.

It will commence with the fact of the importation of cholera into Constantinople.

Importation into Constantinople.

The state of public health in this city manifested nothing which would lead to the apprehension of the advent of a choleraic epidemic, when, on the 28th June 1865, the frigate *Moukbiri-Sourour* arrived from Alexandria, where cholera was raging. This vessel having made a voyage of more than five days' duration, was, on the declaration of the surgeon that there was no suspicion of disease on board, in consequence admitted to pratique, according to the regulations in force. This declaration was false. On the evening of the same day, 12 sick men were landed from the ship, of whom one attacked by confirmed cholera sank during the night, the other 11 showing only symptoms of cholerine. It was learnt the next day that ever since the ship had left Alexandria, cases of diarrhœa had been observed on board, and that in the passage from the Dardanelles to Constantinople two men, who had died of cholera, had been thrown into the sea. On the 30th June, nine other cases, two of distinctly marked cholera, were again landed from the same ship, which, after having completed its complement of men, was sent into quarantine near the mouth of the Black Sea.

The sick were taken to the Marine Hospital, near the Arsenal; but as the road from the landing-place to the hospital was encumbered with stores and materials, it was found necessary to make them pass through a barrack occupied by military workmen in the Arsenal. This circumstance should be noted, for the first indigenous cases of Cholera took place among these workmen, and on board of a corvette moored hard by their barrack.

On the 3rd July, one of these military workmen was received into hospital with Choleraic diarrhœa, and on the 5th he showed all the symptoms of Cholera. On the same day a new case was sent in from among the workmen, and another from the corvette mentioned above. The barrack was then evacuated, and the workmen were placed in tents on the heights of the Ok-meidan. Nevertheless, Cholera continued to rage amongst them and on board the ships moored before the Arsenal; it attacked, besides, on the one hand, the guard of the interior of this establishment, and on the other, the masons engaged at work on the building of the Ministry of Marine situated quite close to the barrack of the military workmen. On the 8th July two cases, which resulted in death, were reported outside the Arsenal on a fishing boat and a

waterman's boat. In the meantime, from the 10th July, the epidemic commenced to invade the quarter of Kassim-Pacha, in the neighbourhood of the Arsenal and inhabited by workmen employed on the abovementioned structure. Thence it spread itself, as will be seen further on, throughout the town.

This account, whose principal details have been collected and communicated by Dr. Mühlig (*Gazette Mèdicale d' Orient*, August 1865), an account whose accuracy in every particular is indisputable, offers an example, which it is impossible to doubt, of the transmission of Cholera by importation, which, though very restricted, was followed by a very grave epidemic. It does not appear possible to place in doubt here the connexion of cause and effect between the imported disease and that developed consecutively in the very spot where the importation took place.

We give next an example of importation overland from a somewhat great distance from the infected locality and without contaminating the intermediate localities, an importation which occasioned a most murderous epidemic.

Importation into Borchi.

On the 7th August 1865, several German families coming from Prussia, arrived in the village of Borchi, in the district of Balta in Russia, for employment on the railway. During their journey they had stopped one day, the 4th, at Galatz, where Cholera was raging, and they had passed through Odessa on the 5th August. All these Germans appeared, on their arrival at Borchi, to be in good health, with the exception of a child, belonging to the family Jans, who had the diarrhœa and died on the 10th August. From this date Cholera began to manifest itself and to rage violently amongst the inhabitants of the village as well as amongst the newly arrived Germans. The mother of the child Jans fell ill on the 18th August, and died on the 20th. Soon afterwards two more children of this woman sank. Out of eight Germans attacked by Cholera one alone recovered. From Borchi the disease spread to the village of Gavinossa, and then extended far and wide. *(Extract from an official communication—Journal de St. Pétersburg*, No. 283, 1865.)

The Commission thinks it useless to dilate on the necessary deduction from this fact, the authenticity of which is indisputable.

The Commission passes on to a still more interesting example, in so far that it proves that a single case of Cholera, imported by railway from a great distance, may give rise to an epidemic.

Importation into Altenburg.

Towards the end of August 1865, Cholera suddenly broke out at Altenburg in Saxony, in the centre of Germany. The first case that was reported was that of a Mrs. E., who had left Odessa on the 16th August and had arrived at Altenburg on the 24th, without having stopped

anywhere. This lady had her infant with her, 21 months old, suffering from diarrhœa. She had lodged with her brother in the Kunstgasse, No. 678. On the 27th August Dr. Geinitz was called to attend the infant, whose diarrhœa had become very severe. The mother, who was perfectly well, stated that on her departure from Odessa there was no sickness in the town (we know that there were then in the lazaretto six cases of Cholera imported from Constantinople and that the day after her departure the disease appeared in the town) and that having embarked to proceed up the Danube, every body on board appeared to her to be in good health, although the steamer passed before several places where Cholera was raging (it is not mentioned in the narrative whether in this part of the passage there was any communication between the steamer and these localities). Be this as it may, three days after her arrival at Altenburg, on the 27th August, the same day that Dr. Geinitz had visited her child, Mrs. E. fell sick, and the next day Dr. Geinitz recognised all the symptoms of Asiatic Cholera. She died on the 29th. On the same day, in the same house, the sister-in-law of Mrs. E. was attacked and sank on the 30th. The infant died on the 31st, of exhaustion says the narrative. From this house Cholera spread to the town and its environs. The family of an artisan, who died at Altenburg on the 13th September, carried the disease to Werdaw. The dwelling occupied by this family was the point of departure of an epidemic which carried off two per cent. of the population of the town (Pettenkofer).

This was a case which, if it had not been made the object of an attentive enquiry by distinguished physicians, would, no doubt, have been cited as an example of the spontaneous development of Cholera in the centre of Germany; but the great authority of Pettenkofer, who has made a special study of this epidemic, leaves no room for uncertainty. In whatever place Mrs. E. and her child may have contracted Cholera, still they passed through places where the disease existed, and, as soon as they arrived at Altenburg, became the starting points of an epidemic. Cases of this kind are certainly not rare, and with the increasing rapidity of communications, it is probable that they will become more and more frequent; but what is rare is their making their appearance at first with such great clearness, and that afterwards the trouble was taken, or that it was possible, to verify by an enquiry whether in cases, the contrary in appearance, the importation in reality did not take place.

In the case in question, was it the infant suffering by Choleraic diarrhœa, who transmitted the disease to the mother, as one would be inclined to admit, judging from the perfect health of Mrs. E. on her arrival at Altenburg? or were the germs of the disease implanted in the latter under circumstances similar to those under which it was acquired by the infant? It is impossible to say. However, it should not escape attention that under the first supposition, it would be asserted that a single case of Cholerine imported into a healthy locality can be made the starting-point of an epidemic of Cholera. But the Commission does not think this fact sufficiently convincing to draw this conclusion from it.

The Commission will finish its quotations on the subject of Cholera transmitted by importation, with a fact as characteristic as the preceding, although more limited in its consequences.

Importation into Thoydon-Wood in England.

In 1865 the appearance of Cholera in England was very confined, but carried with it the proof of its transmissibility. In September it showed itself at Southampton.

At this time a person named Groombridge and his wife, belonging to the village of Thoydon-Wood, two miles from Epping, in Essex, went to Weymouth on account of their health. Mr. Groombridge was suffering from an intestinal affection. On the 25th September they returned to Thoydon, after having passed through Southampton, where Cholera existed.

In her return journey, Mrs. Groombridge felt herself indisposed. On the 26th September the Drs. MacNab were called to see her, and, apart from a slight diarrhœa, found nothing alarming in her condition. On the 28th symptoms of Asiatic Cholera broke out, following on which she died on the 9th October. On the 30th September her daughter Emily, seven years old, was attacked and died in the space of nine hours. The same day a servant in the house was also attacked, but he recovered.

The Drs. MacNab, during all this time, had been very attentive to their patients. On the 2nd October, Mr. MacNab, senior, was seized by Cholera and died on the 3rd. Two more cases took place on the 2nd in the house of Mr. Groombridge: his daughter Kate and a servant were attacked and recovered. On the 6th October Mr. Groombridge himself, one of his laborers named Riley, Mrs. Groombridge's mother, and Mr. Charles Groombridge were all seized, and all died with one single exception.

The man Riley, who had been taken to his own home, sank on the 7th; a woman, named Saville, who had nursed him and laid out the corpse, was attacked on the 7th and died the next day. The disease spread no further. Nevertheless, two other cases, in connexion with the preceding, took place afterwards at Coppice Row, half a league from Mr. Groombridge's house, in the family of a laborer named Haggar. One of these cases, that of Henry Haggar, ended with his death, on the 2nd November, in the space of 22 hours. Now the wife of Haggar was the daughter of the woman Saville, named above, and had attended her during her illness. She had changed her clothes before returning home; but she had washed them afterwards in her own house *(Medical Times and Gazette,* 1865*)*.

It would be difficult to find a more conclusive case of Cholera contracted in an infected locality (Southampton,) and imported into a healthy place (the house of Mr. Groombridge at Thoydon) where the disease spread itself exclusively among persons connected, more or less directly, with the diseased persons. There will be no mention made

here of an epidemic influence hanging over the locality, since the epidemic, circumscribed, as it were, in one single house, showed itself nowhere else in the country. We are ignorant of the reason why the disease did not extend itself, as we are of many other circumstances; but what this fact establishes, without any other reasonable interpretation, is the transmission of the disease by connexion with people afflicted with it.

To facts of this nature are opposed cases where, after communication with an infected place, the first attacks of Cholera have not manifested themselves on persons coming from that place, but on the inhabitants of a hitherto healthy locality and where the relations between the one place and the other were inappreciable. But those who make this objection set out with a principle contradicted by observation, a dangerous principle, which consists in not admitting the possibility of the importation and propagation of Cholera, except by individuals themselves attacked by the confirmed disease.

The Commission for the present confines itself to this simple remark, not wishing to anticipate what should be the subject of a later examination.

3rd.—Proofs taken from the progress of epidemics in infected localities.

A third order of proofs of the transmissibility of Cholera is afforded by the mode of progress of epidemics, either in different parts of a country, or, in the same locality, from one quarter to another.

This order of proofs, to tell the truth, is not different from the preceding; it is the verification of the transmissibility by the manner in which a disease once declared diffuses itself.

This fact, demonstrated by observation, can be established, that the denser the population of a country where Cholera makes it appearance, the more multiplied the relations there, and the more accelerated the means of communication, the more rapid are the diffusion and extension of the disease; though it must be understood that it does not necessarily follow that it is more violent. It is the confirmation of the law applicable to the progress of epidemics of Cholera generally considered. It is clear that to properly appreciate the succession of facts in the point of view we occupy, it is no longer to populous places, where relations are inextricable, that we must go to study them; but only amongst scattered populations, forming small assemblages, and having only communications easily appreciable. At the same time Constantinople, which may be considered in the aggregate as a vast assemblage of distinct localities, separated by natural obstacles, is an exception in this respect; and, therefore, it has been found possible to follow with a certain amount of precision the extension of the last epidemic up to the moment of its general diffusion.

Another rule can be established, as being deduced from observation, that an epidemic of Cholera, in its commencement, does not appear

simultaneously in many localities within a territorial circumscription, but breaks out in one of these localities. It is the same generally as regards great cities where the epidemic at first does not manifest itself in many places at the same time, but ordinarily bursts forth in a series of cases in one quarter, sometimes in one house, before it makes its appearance in other parts of the city. Here, however, the general rule is not without exceptions; because in a great city, where arrivals are very frequent, importation may take place simultaneously in many places.

Progress of the Epidemic at Constantinople.

At Constantinople, as has been seen above, Cholera made its appearance at first in the Arsenal, where it had been brought by the sick who were landed from the frigate *Moukbiri-Sourour* on the 28th June; from the Arsenal it spread to the adjoining quarter, Kassim-Pacha; then some cases, few in number, made their appearance in various parts of the town, the persons attacked being mostly those who had fled from the quarter first infected.

Up to the 16th July the total number of deaths from Cholera reported in the city (exclusive of those in the Marine Hospital), amounted to 130, when it was suddenly learnt that the disease had just broken out with violence at Ieni-Keui, a village situate on the Bosphorus, 12 or 15 kilomètres from the quarter where the epidemic was raging. Was this one of those caprices, one of those inexplicable leaps which used to be attributed to epidemic Cholera, and which used to be brought forward as a fact demonstrating the epidemicity, pure and simple, of the disease? Not at all. It was proved that the first case of Cholera at Ieni-Keui took place on the 11th July in a Turkish café, the person attacked being a workman who had come from Kassim-Pacha; that the next day several of the persons who frequented this café fell sick, and that two of them died; that on the following days the disease spread in the quarter up to the 16th, on which date, in consequence of several deaths among important families, the entire population of the village was seized with a terrible panic, and almost all took to flight in various directions. Mussulmans, Greeks, Armenians, and Jews, all sought refuge in other villages and in quarters of the city hitherto uninfected, bringing the disease with them. The Jews especially, who had suffered most, and who, in their precipitation, carried with them their soiled effects and their dead, became the principal propagating agents of the disease. At Kouskoundjouk, at Has-Keui, and at Balata, the epidemic burst forth immediately after the arrival of these fugitives: the statements of the Sanitary Intendancy, and those of the Special Commission leave no doubt on this point. From this moment the generalisation of the epidemic may be dated, and after this, except in regard to certain villages, it becomes more difficult to follow it up. These facts are, in addition, related with many details in several articles of the *Gazette Medical d'Orient* (1865-66,) and in a recent work of Dr. Mongéri *(Etude sur l'epidemic de Cholera à Constantinople en* 1865*)*.

If the Commission did not think it superfluous to insist on this order of proofs, and did not fear to lengthen this report uselessly, it would quote a multitude of authentic narratives in support of the successive development of Choleraic epidemics by successive communications between infected places and places afterwards attacked, wherever it has been found possible to pursue the study with precision. It could quote, among others, the development of the last epidemic at Odessa in the month of August last, having its starting point in individuals occupied in the neighbourhood of the lazaretto, where there were six Cholera patients who had come from Constantinople, these individuals spreading the disease in their own quarter and through the rest of the town.

It could, moreover, quote the recent progress of the epidemic in Podolia having its origin in the importation of cholera into Borchi by the German families spoken of above; but the Commission, after all it has put forward above, thinks it useless to go further into detail.

4th.—Proofs taken from the efficacy of certain preventive measures.

A last order of facts militating indirectly in favor of transmissibility relates to the efficacy of certain preventive measures. The Commission means isolation, that is, rigorous isolation, and above all the interruption of maritime communication with infected places.

In 1831 the Imperial Court of Russia, comprising in all 10,000 persons, isolated itself at Peterhoff and at Tsarskoje-Selo, and no attack of cholera was observed in it (Report of Drs. Barry and Russell, 1831).

During the epidemic of 1865, at Constantinople, the pupils of the Military School, to the number of 500, were isolated in the establishment, and cholera did not penetrate to it, though it raged in the neighbourhood. It would be easy to bring forward many analogous facts in all epidemics.

Greece had escaped former epidemics of cholera while a rigorous quarantine had been maintained on choleraic arrivals; in 1854 cholera was imported into the Piræus without obstacle, and a cruel epidemic was the result. In 1865 Greece maintained a rigorous system of isolation and was safe, although the disease raged in the neighbourhood.

Sicily, which, in 1854, had, like Greece and for the same cause, suffered severely, did more than the latter country during the last epidemic; it interrupted all communication with infected localities, and notwithstanding the continual passage, at a little distance, through the Straits of Messina, of ships coming from countries where cholera prevailed, Messina and all Sicily quite escaped.

To these facts it is objected that other places visited unrestrictedly by arrivals from cholera-infected places have also been spared, while others again have not escaped even with the aid of cordons, or of very severe quarantines, so that the coincidence between the employment of preventive measures and preservation is far from being a constant fact.

To these objections the Commission replies in the first place that it does not pretend and nobody maintains that imported cholera is always transmitted. Transmission necessitates auxiliary circumstances which happily are not always met with, or the ravages of cholera would soon cause the extinction of the human species.

And as to the frequent inefficacy of measures of quarantine, the Commission estimates that, before concluding thus, it is necessary to see whether the measures spoken of have answered well, either in their nature, or in their application, to the proposed end, and whether means really adapted to spread the disease—sanitary cordons for example—have not often been taken for preservative measures? In such matters words do not suffice: there are measures and measures. It is necessary to see before deciding in a sweeping way if such and such means, which might be thought efficacious and which have shown themselves useless, were really adapted to the evil they were meant to prevent.

The Commission therefore considers the arguments abovementioned to be of little weight. In any case, it is clear that nothing can be concluded against the transmissibility of cholera from the inefficacy of quarantine.

The Commission unanimously concludes that *the transmissibility of Asiatic cholera is an incontestable truth proved by facts admitting of no other interpretation.*—(Adopted unanimously.)

IX.

Are there conclusive facts compelling the admission that cholera can spread itself far and wide by certain conditions of the atmosphere, by winds, or by some vicissitude or modification in mid-air?

Directly it is demonstrated that out of India, or at least in the countries previously enumerated, epidemic cholera has never been spontaneously developed, and that it has always reached those countries in the shape of invading epidemics; there is no longer any necessity to enquire whether, in our countries, certain conditions of the atmosphere or of the soil, or certain hygienic conditions, give birth to epidemic cholera; it need only be asked whether, independently of importation by man, cholera can be transported to a great distance by a contaminated or modified atmosphere: in other words, whether the atmosphere can act as a vehicle for the principle of the disease and spread it abroad.

The question thus put is one of great importance, since, if it were answered in the affirmative, it would follow that measures of quarantine would be only of very doubtful efficacy. The Commission has therefore studied it with great care.

To prove that cholera can be propagated by the atmosphere beyond a certain distance, at least one conclusive fact is necessary, *viz.*, that which establishes *the passage of the disease from an infected to a healthy locality, without any possible previous communication.* Now, this fact has no existence in science; and the Commission has been able to

convince itself of the want of weight of all the assertions made on this subject. When mention was made of deserts leaped over, of seas traversed, of useless sanitary cordons, it was evident that no pains were taken to see if these assertions were borne out by the facts; it was not known that observation had demonstrated that deserts had always been the most efficacious barriers against the propagation of cholera, for the simple reason that the means of communication there are more difficult than elsewhere; it was lost sight of that if the sea is an obstacle, it admits, on the other hand, of easy and dangerous communication; and it was not even asked whether sanitary cordons, as they have been organized in populous countries, were not in fact very efficacious means of propagation.

No doubt, it has not been possible everywhere to demonstrate the previous communication between an infected place and one subsequently attacked, for the reasons mentioned above; but wherever search has been carefully made, and wherever the conditions of a locality lend themselves to the verification, it has been found possible to prove this previous communication.

No conclusive fact therefore proves that cholera has been imported from a distance, from one place to another, simply by atmospheric agency. And it is indisputable nevertheless, as will be seen below, that the circumambient air is the chief, if not the sole, vehicle of the choleraic principle. This is a circumstance to be noted, but which, in regard to cholera as well as to typhus fever, does not carry with it the possibility of transport to a great distance.

In the absence of any convincing fact, the possibility of importation by the atmosphere alone could still be concluded if it could be established that the transmission of cholera from one place to another has been, in any given case, more rapid than the means of communication employed by man. Now, *it is a law, hitherto without exception, that cholera has never progressed more rapidly than man in his migrations.*

If the last epidemic of cholera is attentively considered, it will be found that, in the entire basin of the Mediterranean, there was not one single place where cholera broke out before any communication had taken place with some choleraic centre. Did the cholera advance by degrees in the direction of certain atmospheric currents? No; *it radiated and declared itself only in places where there had been arrivals from infected localities and nowhere else.* Would it have been the same if cholera had travelled through the atmosphere? No; it would have been seen in places exempt from all communication with infected localities.

The Commission replies therefore that *no fact has hitherto been brought forward to prove that cholera is spread abroad by the atmosphere alone whatever may be its condition; and that moreover it is a law without exception that an epidemic of cholera has never spread from one place to another in a shorter time than that necessary for man to journey between both places.*—(Adopted unanimously.)

X.

How is the importation of cholera effected, and what are the agents of transmission?

According to all known facts, two conditions are necessary for the outbreak and propagation of Asiatic cholera in any locality: arrivals from an infected place, and circumstances favoring the transmission. At present we shall occupy ourselves with the former of these conditions. A choleraic arrival, so called, is a complex thing; it comprises man and everything coming directly from him, then his clothing, his effects, his goods, his animals, the ship that carries him, and, in fact, every thing that can accompany man. Cholera is, no doubt, transmissible by choleraic arrivals; but is a production of this nature capable of transmitting the disease? and is everything constituting a choleraic production equally susceptible of effecting the transmission?

It has been long believed that, so far as maritime arrivals are concerned, the lapse of some days between the departure and arrival, without any manifestation of cholera, was a sufficient guarantee against the importation of the disease. Now, experience has shown that it is nothing of the kind, and certain well established facts tend to prove that even a long passage without appreciable accidents is no guarantee against danger. On the other hand, it is certain that the regular steamers from India, which have been working for a great number of years, have never imported cholera into Suez; so that it may be said, without specifying more at present, that if every arrival from countries infected by cholera is not adapted to propagate the disease, it is not the less prudent, until something fresh is known, to consider every such arrival with suspicion. A more detailed examination of the question will demonstrate it.—(Adopted unanimously.)

XI.

Under what conditions does man import cholera?

There is no doubt that man, infected with cholera, is the principal importing agent of the disease. There are abundant facts to demonstrate this. In the greater number of epidemics whose origin has been shown, one or two cases of cholera, come from some other place, are found at the point of departure. It would be idle to add other facts to those we have already quoted. It is equally proved by observation that the arrival of a large number of cholera cases in a healthy locality is not necessary to develope a great epidemic in that place. Most frequently it is only a few cases, as at the Piraeus, at Varna in 1864, at Constantinople last year, and at various other places too numerous to mention; sometimes one single case, as at Altenburg, has been the starting point of an epidemic. In this connexion, the study of facts demonstrates that there is no sort of proportion between the amount of cholera imported and the intensity of the epidemic consequent upon it; this

intensity is proportionate to the more or less favorable conditions of the locality to which the disease has penetrated, in the same way that a conflagration is not proportionate to the spark which gave rise to it, but to the combustible nature and the accumulation of the material it finds in its way.

Therefore, *man, tainted with cholera, is by himself the principal propagating agent of the disease, and a single case of cholera may give rise to the development of an epidemic.*—(Adopted unanimously.)

XII.

We go still farther: Writers of great authority (Pettenkofer, Hirsch, Griesinger) maintain and bring forward facts tending to prove that an individual coming from a choleraic focus, and suffering merely from diarrhœa, may import and propagate cholera in a healthy locality. A member of the Commission, Dr. Millingen, has brought forward many analogous facts extracted from a work on cholera published at Copenhagen in 1855 by Dr. Brika. The greater number of the facts quoted are very interesting, and render the theory very probable; but they do not possess all the clearness necessary for a rigorous demonstration.

A very convincing example, on account of the details accompanying it, is the fact reported in the *Gazette Medical é de Paris* (28th April 1849) by Dr. Alexandre, of which we give an abstract here: There was not the least sign of cholera at Hamel, a rural commune, 25 kilomètres from Amiens, where, on the 4th April, a soldier named Guilbert, *suffering from diarrhœa,* arrived at the village from Paris, where cholera was raging. He was received into his father's house, where he remained in bed for three days; on the fourth day he went to the hospital at Amiens. On the same day André Guilbert, the soldier's brother, was attacked by cholera in its worst form, and died in twelve hours. This man did not dwell under the paternal roof; but he had gone to the house many times every day since the arrival of his brother. The wife of André Guilbert was seized, three days after the death of her husband, by cholerine, speedily followed by cholera, and died on the 16th April. Guilbert (the father) who, during the stay of his son the soldier, had already felt symptoms of cholerine, was attacked by cholera on the 11th, and died on the 15th. Another son of this man, 17 years old, and a child of four years, the son of André, suffered from cholerine, but recovered. The father of André's wife, who had been attending to his son-in-law and daughter, was attacked by confirmed cholera, but recovered. A child 11 years old, who frequented Guilbert's house, and whose relatives had also been nursing André and his wife, was seized by cholera on the 14th, and died the next day. As for the soldier who had sown the seeds of the disease in the village, he left the hospital in the course of some days perfectly cured, and without its being perceived that he left behind him any disease analogous to his own. Dr. Alexandre adds, with a good deal of reason, that this fact proves that cholerine is nothing else but cholera in a less severe form.

This fact is, it must be admitted, very conclusive, and, added to published cases more or less analogous, invests the opinion of authors who hold that premonitory diarrhœa, or cholerine, may transmit cholera, with a great deal of probability.

We do not possess such a characteristic example, so far as arrivals by sea from infected countries are concerned.

The fact indeed has been quoted to the Commission, of the importation of cholera into the Piræus in 1854, in consequence of the landing of four sick people, suffering only from cholerine, and who recovered; but there had already been, on board the ship, two cases of cholera followed by death, and the sailors had gone on shore; so that it is impossible to conclude with certainty that the sick people were the transmitting agents of the disease.

The Commission has been led, by these considerations, to conclude that *certain facts tend to prove that a single individual (and à fortiori many) coming from a contaminated locality, and suffering from diarrhœa, may suffice to occasion the developement of an epidemic of cholera, or, in other words, that premonitory diarrhœa, as it is called, may transmit Cholera.*

As to whether individuals leaving a choleraic focus, and enjoying, on their arrival in an uninfected locality, apparently perfect health, can, of themselves, carry the disease with them, the Commission replies that *there is nothing to prove that it is so.*

There are no doubt examples which show that cholera has broken out in a locality after the arrival of individuals in this condition, but has it been found possible to prove that these individuals were really in a perfect state of health, that they had not the diarrhœa? No; such proof, except under peculiar conditions, is, and always will be, in by far the larger number of cases, impossible. And then, supposing the absence of any well-proven premonitory symptom, if cholera breaks out, as it has been seen to do, subsequent to such arrivals, is it reasonable to conclude that healthy individuals, of themselves, have brought the disease with them? might they not have infected articles with them?

After all, when the details of the question are entered upon, it is seen how difficult it is to determine precisely what is the part played in importation by such and such a choleraic arrival.—(Adopted unanimously.)

XIII.

What is the duration of incubation?

The question of the importation of Cholera by man leads us naturally to examine what is the *maximum* duration of the incubation of Cholera, and up to what point it is to be taken into consideration in a prophylactic point of view.

The duration of the incubation of Cholera, that is to say the time which elapses between the supposed moment of the penetration of the morbific agent into the organisation and the moment when the first symptoms of the disease show themselves, is generally very short. Observation shows, in fact, that in the immense majority of cases, a few days suffice for the incubation, and that sometimes this period does not exceed a few hours. This general rule is placed beyond doubt by the first cases which follow the importation of the disease into a healthy locality; it is seen then that, when the disease is transmitted, a few days (a week at most) scarcely elapse between the imported cases and those following upon them. Later, when the epidemic is established, the connexion between facts becoming very difficult to establish, nothing certain can any longer be concluded as to the incubation.

The general rule is still further placed beyond doubt by what ordinarily occurs on board ships leaving a Cholera focus. If Cholera breaks out in them at all, it does so in the greater number of cases during the first days of the voyage, and acting on this generally admitted fact, the quarantine for arrivals from localities infected with Cholera was fixed at five days. Such then is the general rule. But there are exceptional cases which would lead to the belief that the period of incubation may be prolonged for more than 20 days.

These facts, to have a precise value, can only be taken from on board ships. Now, under this condition, it is not very rare to find confirmed Cholera not breaking out on board until six or seven days after the departure of the ship from the infected locality. The last epidemic affords examples of this.

The case has been quoted of an emigrant vessel which left Hâvre for New York on the 9th November 1848, and on board of which Cholera did not show itself until the 16th day of the voyage. When these emigrants, numbering 346, the majority being Germans, embarked, Cholera had ceased at Hâvre, but many of them came from Germany, where the disease existed. Nineteen were attacked, and seven died. It is to be remarked that they transmitted the Cholera to thirteen persons in Staten Island, where the ship was placed in quarantine.

At the same period (3rd November 1848) the ship *Swanton* also left Hâvre with 280 emigrants on board for New Orleans. Cholera did not break out on board till the 25th November, that is, the twenty-third day of the voyage, occasioning thirteen deaths. A certain number of these emigrants came, like those on board the other ship, from places in Germany where Cholera was raging *(Baly. Report on Cholera, &c.*, 1854*)*.

We give another fact in connexion with the last epidemic at Gibraltar. On the 21st August 1865, while Cholera was prevailing in the town, a portion of the 1st battalion of the 9th Regiment, which until then had maintained good health, received orders to leave for the Cape, and were embarked on board the *Renown*, a large new ship, well ventilated. The next day, 22nd August, a case of Cholera, which rapidly resulted fatally, took place on board. The ship was towed out, and as

no other case showed itself, it went out to sea after the lapse of 30 hours. Every thing went well till the 5th September; but on that date, after having been 13 days at sea Cholera broke out on board, and in the course of 14 days carried off nine men, one woman, and several children, as well as the surgeon of the ship. *(Extracted from an official communication by Mr. Rutherford, Army Inspector General at Gibraltar.)*

These cases, though rare, constitute exceptions which it is important not to neglect. It is to be remarked in the first place that confirmed Cholera is spoken of in every case. Now, as it is distinctly proved at present that premonitary diarrhœa is an effect of choleraic poisoning, a lighter degree of the disease itself, and, in all probability, is capable of transmitting Cholera, it follows that, in a practical point of view, this diarrhœa should be assimilated to the attack of Cholera itself, and should not be reckoned in the period of incubation. In other words, according to the Commission, the manifestation of Cholera on board a ship, as everywhere else, does not commence only with the first attack, but with the symptoms of premonitory diarrhœa which so often precede Cholera properly so called, and which in the great majority of cases do not quite reach it.

Who then can assert that in these exceptional cases there were not before the attacks, cases of diarrhœa marking the breaking out of the disease?

On the other hand, admitting that it was not so, directly it is proved (as we shall say further on) that baggage or clothes coming from a choleraic focus may be made the receptacle of the morbific principle and communicate the disease, is there not occasion to ask whether, in these exceptional cases, the disease was not contracted on board during the voyage?

These exceptions then prove nothing against the general rule showing that the duration of choleraic incubation does not exceed a small number of days; but they prove that the duration of a voyage, even though it be somewhat long, without an attack of Cholera, is no sure guarantee against the importation of the disease.

The *Maximum* duration of choleraic incubation can be fixed with precision only by facts collected beyond the limits of any possible contamination, that is to say, in connexion, with individuals who have quitted a Cholera focus and been placed out of reach of any fresh infection; such would be an isolated traveller in whom Cholera does not show itself until a certain time after quitting the infected place, provided the traveller does not bring with him any object adapted to serve as a receptacle of the morbific principle; such would be the woman of Altenburg, if she had not had her sick child and her clothes with her; but such, above all, would be facts collected in connexion with individuals subjected to strict isolation after having been separated from every object capable of transmitting the disease. In these cases, the longest time which would elapse between the isolation and the manifestation of choleraic symptoms would give, supposing that the study was extended over a large number of facts, the maximum of choleraic incubation.

But the Commission is obliged to admit that facts collected under such conditions do not exist, for the very simple reason that it having scarcely been supposed hitherto that Cholera is transmissible except by man suffering from the disease in its height of intensity, and no account having been made of its transmissibility by contaminated objects, measures adapted to bring these facts forward as evidence have not been instituted generally.

For this reason, the Commission, adhering to the general rule, has recorded the following conclusion: *In almost every case the period of incubation, that is to say, the time which elapses between the moment when an individual may have contracted the choleraic poisoning and the breaking out of the premonitary diarrhœa or of confirmed Cholera, does not exceed a few days; every fact quoted of a longer incubation relates to cases in which the contamination may have taken place after departure from the infected locality.**—(Adopted unanimously.)

XIV.

Can Cholera be imported and transmitted by living animals.

This question should be regarded under two different points of view it may be asked whether certain animals are not adapted to contract Cholera, and consequently to transmit it under the same conditions as man, or whether living animals not sick, may not in the same manner as a contaminated object, serve as a receptacle of the principle of the disease and import it.

Very respectable writers, and notably Griesinger, do not doubt that cert tain animals may attain a morbid condition having the greatest analogy with Cholera. They quote the murrains which, during epidemics of Cholera, have frequently raged amongst birds, cattle, horses, &c., and from this coincidence, joined with a certain analogy in the symptoms, they draw the conclusion of a certain identity of nature. Moreover, from some experiments made by M. Meyer, Thiersch, &c., it has been proved that choleraic dejections may transmit Cholera to animals. But all these facts, let us hasten to say, are very far from being convincing, and admitting even the analogy of certain murrains with Cholera, and admitting also that the white mice poisoned by Thiersch showed all the symptoms of this disease, we are far from being authorised to deduce the identity of nature and still less the transmissibility from the animal to man. In reality no fact has hitherto been brought forward attaching any value to this opinion.

It remains to ascertain whether a living animal can, through itovering, serve as a receptacle for the principle of the disease. One unders

* The Conference has modified as follows the second part of the conclusion of Chapter XIII. (Sitting of 18th June, Minute No. 18) :—

"Every fact quoted of a longer incubation relates to cases which are not conclusive "either because the premonitary diarrhœa has been comprised in the period of incubation, "or because the contamination may have taken place after departure from the infected "locality."

stands that this may be so, and this is all that the Commission can say. In this connexion, living animals would enter into the category of objects capable of importing Cholera. In consequence, and without dwelling further on this point, which will be considered in connexion with prophylactic measures, the Commission confines itself to the following answer: *There is no known fact establishing the importation of Cholera by living animals; but it is reasonable, nevertheless, to consider them, in certain cases, as being amongst susceptible objects, so called.*—(Adopted unanimously, except by MM. Bykow and Lenz, dissentient.

XV.

Can Cholera be transmitted by linen, clothes, and articles of common domestic use generally?

The Commission is unanimous in recognising that articles of domestic use belonging to persons tainted with Cholera or soiled by their dejections, may transmit Cholera; and yet to afford a strict demonstration of this opinion by examples admitting of no other possible interpretation only a very small number can be collected. Not that facts militating in favor of this opinion are rare: on the contrary, they are very numerous; but, as occurs almost always in similar cases they present themselves surrounded by circumstances permitting of different interpretations. Such are facts collected in a choleraic focus. Thus the remark generally made that laundreses and washerwomen are special sufferers during epidemics comes forcibly in support of transmissibility by soiled linen; but as the disease might possibly have been contracted otherwise, it would be necessary, to convert the probability of the transmission into certainty, that the probability should result from the comparative study of a great number of facts.

Convincing examples then can only be drawn from places beyond the limits of choleraic foci. Now, under this limitation, we find cases recorded in science of the transmission of Cholera by linen brought from an infected locality. It was in this way in 1853, at Cessantès, near Vigo, that Cholera was communicated to two washerwomen who had just washed some foul linen which had been brought from the lazaretto where the disease existed, while at the same time their village, the town, and the entire province were still untainted *(Monlau)*.

The first case of Cholera observed in the village of Moor-Monkton, six miles from York, occurred on the 28th December 1832. The disease did not exist at the time in the neighbourhood, or in any place within 30 miles. John Barnes, a laborer 39 years old, had been suffering for two days from diarrhœa and cramp, when on the 28th December he was taken with all the symptoms of Cholera, accompanied with a general coldness of the members, and died the next day. The sick man had been visited by two respectable physicians, the brothers Hopps, one of whom, a very experienced practitioner from York, immediately set to work to arrive at the probable source of the disease. His first investigations were made in vain. In the mean time the wife of John Barnes, and two other per-

sons, Metcalfe and Muscroft, who had visited the sick man the day before were themselves seized by Cholera; they recovered. In addition, John Foster, Ann Dunn, and a widow Breyke, who had all been in communication with the above mentioned Cholera patients, all suffered from a severe premonitory indisposition, which, however, was checked. While the physicians were vainly seeking to descover the origin of the disease, the mystery was revealed in an unexpected way by the arrival of a son of the deceased. The young man had been apprenticed to his uncle, a shoemaker in Leeds. He informed the physicians that his aunt (his father's sister) had died of Cholera fifteen days before, and that, as she had no children, her effects had been transmitted to John Barnes through the common carrier, and without having been washed. The trunk containing the things had been opened by John Barnes in the evening and the next day he fell ill. *(J. Simpson. Observations on Asiatic Cholera London,* 1849.*)*

Dr. Simpson in the same work, relates a very curious fact which would tend to prove that an article, contaminated and shut up, communicated Cholera after the lapse of ten months. The occurrence was observed at York in 1833 by Dr. Brown. A woman aged 67 years, died of Cholera in August 1832. Ten months later, at Whitsuntide, two nieces of this women having come to visit their uncle, the latter for the first time opened a drawer containing, besides some trinkets which he offered to his nieces, the cap worn by his wife at the moment of her death. This man was seized by Cholera the same evening and died the next day. What gives this fact some value is that Dr. Simpson does not doubt the veracity of Dr. Brown's narrative.

Dr. Simpson adds: "The cases quoted above are of indisputable "authority. They evidently show that the disease may be carried from "place to place by means of clothes."

We give another remarkable fact taken from Pettenkofer's work. *(Untersuchungen und Beobachtungen ueber die Verbreitungsard der Cholera: Munchen,* 1865).

At Lustheim, a commune of Schleisheim, near Munich, the first case of Cholera occurred in a family of day-laborers, consisting of father, mother, daughter and a female relative. Another daughter was in service in Munich. The latter sent her parents some food and the old clothes of a family some members of which had just died of Cholera. The meat, which was already slightly tainted, was eaten and the clothes were worn. On the third day, the 21st September 1854, the father and mother were attacked by Cholera, and died. On the 22nd their daughter was attacked. On the 25th the son, who was in service elsewhere, came to the house to attend the funerals. He fell ill in the course of the afternoon and died in five hours. The daughter who was in service at Munich, and who had sent the things spoken of above, having come on the 22nd to nurse her sister, fell ill on the same day and died also. On the 26th the

female relative who lived with the family, was seized in her turn, and finally sank. The only member of the family who survived was the daughter who was attacked on the 22nd.

There is also to be found in Pettenkofer's work the very interesting case of a prisoner who, transferred from the police lock-up at Munich, where many cases of Cholera had occurred, to the prison of Ebrac, which was as yet healthy, carried the disease with him, although he only had diarrhœa on his arrival. He entered on the 20th August 1854, and showed the characteristic symptoms of Cholera on the 26th, but recovered; his gaoler, however, who was attacked the next day, died in a few hours. An epidemic was the result. The disease broke out on the 28th in the part of the prison reserved for women, which is completely separated from that set apart for men. Pettenkofer proved on enquiry that the first woman attacked had been employed on the 21st in washing the foul linen taken off on the 20th by the prisoner above mentioned.

Lebert (*Choléra en Suisse*: Francfort 1856) reports the very interesting case of a man who was seized with Cholera at Lugano after the complete cessation of the disease in the town, and after having made use of clothes which had been worn by a Cholera patient, who had died two months previously in the same house. Dr. Pappenhein has related in the *Journal de Casper* (Tome V. 1854) facts from which it results that persons have contracted Cholera, after the disease had entirely ceased by sleeping in beds which had been made use of by Cholera patients during the epidemic and which had been put aside and kept locked up since then.

If all these facts, which we could multiply, do not afford us an absolute certainty, they establish at least a probability so great that we cannot refuse to attach a very great value to it.

In the case quoted before of an emigrant ship leaving Hâvre in 1848 for America, and on board of which Cholera did not break out till the sixteenth day of the voyage, it was said that the out-break of the disease was to be attributed to the opening of their chests by the emigrants, these chests containing contaminated baggage. This, no doubt, is only a supposition, but it is one which becomes very probable when we consider, on the one hand, the time which elapsed between the departure from Hâvre, where Cholera had ceased (many of these emigrants came from a part of Germany where the disease existed), and the moment of the first attack; and, on the other hand, all the facts militating in favor of the transmission by articles coming in some way in contact with persons infected with Cholera. In the interpretation of this fact, there are not in reality more than four possible suppositions: either the spontaneous development of Cholera on board the ship, which is unexampled as a matter of fact; or an incubation of at least sixteen days, which would constitute an infinitely rare exception; or a concealment of the first indications of choleraic poisoning, which would not fail to be discovered afterwards; or finally, a contamination contracted on board, which is more in harmony with what we know of the modes of transmission.

Besides facts proving that Cholera may be transmitted by means of articles which have been made use of by Cholera patients, there are others which show that the camping ground where an epidemic has taken place (in India), hospital wards, rooms, and ships which have contained persons suffering from Cholera, may sometimes preserve for a certain period and under certain conditions, the property of transmitting the disease. It would take too much time to enumerate the facts, which are besides well known and place this assertion beyond doubt.

But, in regard to the well proven possibility of the transmission of Cholera by articles coming from a choleraic focus, and above all by articles which have been handled by Cholera patients, it is as well to remark that, in the generality of cases, articles of domestic use coming from a place infected by Cholera do not import the disease. If it were otherwise, in all the defferent epidemics which have occurred and notably in the last, the generalisation of the disease in every direction would have been much greater. In fact, if we consider the immense number of travellers who in 1865 left a choleraic focus, and who spread themselves with their baggage over every country of Europe, and, consequently, the number of places exposed to infection by the importation of articles of domestic use coming from contaminated localities, we must of necessity acknowledge that if transmission through this means may have been caused in certain places, it has not occurred in the immense majority of cases.

There are then certain necessary conditions, which happily are rare, to qualify articles of domestic use for the importation and transmission of Cholera.

These conditions are indicated to us in the very instances where the transmission has been effected. In regard to transmission to a short distance, it is necessary that the articles in question must have come recently in direct or indirect contact with Cholera patients, and have above all been soiled by their dejections. This is the circumstance which causes laundresses, washerwomen, and people generally who handle things belonging to Cholera patients to fall special victims to the disease. Now it is clear that this contingency must be of rare occurrence, so far as the effects of a traveller are concerned. It is not impossible, nevertheless, that linen soiled by an individual having merely simple, choleraic diarrhœa may be shut up in a trunk. What is shown to us by facts where the transmission has taken place long after the cessation of the epidemic, or in a place far from the starting point? They show that then the contaminated articles have always been shut up, confined, and kept more or less from contact with fresh air. There is no instance of articles exposed freely to the atmosphere having in a short time (which, however, cannot be precisely estimated for want of sufficient data) transmitted Cholera, while there are cases tending to prove that transmission has occurred by means of articles kept shut up for several months.

It follows from all this that articles of personal use owe their property of transmitting Cholera to their impregnation with matter proceeding from Cholera patients, particularly their alvine dejections, which,

it may be said here, appear to retain in an especial manner the principle of the disease. It follows also that articles thus contaminated rapidly lose, when freely exposed to the air, the property of transmission, but that they retain it when kept confined.

A free current of air then is a purificatory agent for contaminated articles; and so far from being able to transmit the generating principle of Cholera intact to great distances, rapidly destroys it, as we shall demonstrate bye and bye.

Thus much said, the Commission replies that *Cholera may be transmitted by articles of personal use brought from an infected locality, and especially by those made use of by Cholera patients; and that it also follows from ascertained facts that the disease may be imported to a distance by the same articles shut up from contact with fresh air.*—(Adopted unanimously.)

XVI.

Can Cholera be imported and transmitted by means of merchandise?

No case is known establishing the transmission of Cholera by merchandise imported from a country where the disease prevails.

In particular, merchandise imported from India, either to Suez or to Europe direct, has never transmitted Cholera. This would not prove, however, that the thing is impossible, or may not have taken place elsewhere under circumstances which have not been perceived, especially if it is considered that under the name of merchandise are comprised articles eminently adapted for impregnation by the morbific principle, such as drill rags, skins, &c.

The Commission, therefore, while admitting unanimously the absence of proofs in support of the transmission of Cholera by merchandise, admits (by a majority of 10 votes to 6) the possibility of the fact under certain conditions.

(Dissentient: MM. Bykow, Goodeve, Lenz, Pelikan, Polak, and Van Geuns.)

If what has just been said of the agents by which, it is admitted with more or less reason, Cholera may be imported or transmitted, is now recalled to mind, it will be seen, as we showed at the beginning, how difficult it is, in the present state of our knowledge of the subject to distinguish the particular part belonging to each different element in choleraic arrivals, to man, to his luggage, to his merchandise, to the ship. All these elements are not, doubtless, dangerous to the same extent; but they may all be so independently of each other by the simple fact of having come from a locality infected by Cholera.

In consequence, the Commission believes it would be wise, until more ample information is available, to consider, except under peculiar and defined conditions, every arrival from a choleraic focus as suspicious.

(Adopted unanimously, except by MM. Goodeve, Pelikan, and Polak, who have abstained from voting.)

XVII.

Can the corpses of persons who have died of Cholera import and transmit the disease?

In Europe there is scarcely any ground to fear that the corpses of Cholera patients carry the disease from one place to another, because when they are conveyed to a distance, precautions are used which remove all danger; but it is not so in Asia, where in obedience to certain religious customs, it is usual in many countries to send a corpse to great distances. In this point of view, the question has a peculiar interest for Turkey.

It is known, in fact, that at a fixed time every year, the Persians perform a pilgrimage to certain holy places in the environs of Bagdad, and that they are in the habit of bringing with them a great number of corpses in every stage of decomposition, from bones shut up in bags or boxes, to the dead of yesterday, reposing in badly joined chests. These human remains, exhaling a fœtid odour, are brought to be buried near the venerated tombs of the great saints of Islamism. Very frequently these pilgrims also bring Cholera with them, which they spread, more or less, in Bagdad and through the entire province.

The part borne by corpses in such cases is not doubtful; they create conditions of impurity which contribute to augment the ravages of the disease, as we know from all the information we possess on this subject. But has the importation of corpses ever given birth to the disease? The only reply that can be given to this is that every time Cholera has been brought to Bagdad by the Persian pilgrims, they themselves had it amongst them long before their arrival at Bagdad; so that it is difficult to define the part borne by the dead and that by the living. On the other hand, when the pilgrims have arrived free from Cholera, the disease has never broken out either amongst them, or beyond their community, during the ceremonies attendant upon the inhumation of the corpses, whatever may have been the infection resulting from putrid exhalations. All that we can conclude is, that the Persian corpses, putrid as they were, did not give birth to Cholera; but we cannot say that this is so with the corpses of persons who have died of Cholera.

The opinion held by many physicians who have attentively studied the question of late is that the corpses of Cholera patients are very active agents of transmission. It seems indeed very natural, the transmissibility being admitted, that this should be so, the corpse being supposed to contain all the elements having the property of reproducing the disease. It is nevertheless, a matter of fact that physicians who have made a speciality of the pathological anatomy of Cholera, and who have made hundreds of *post mortem* examinations, have not suffered more from the disease than others. This fact has been noticed in India as well as in Europe. Can it be because *post mortem* examinations on the corpses of Cholera patients are generally held while the body is fresh, at a time when a certain degree of fermentation, which is perhaps essential to the development of the morbific principle, has not yet been produced? It is possible. But, on the other hand, when conclusive facts in support

of the transmission by means of corpses are sought for, they are not found, or rather complex facts are found which leave it undecided whether the transmission of the disease is effected by the dead body more than by the dejections previous to death, or by any other circumstance.

In reality, there is no strict proof of the fact, and it does not necessarily follow that, because a Cholera patient or his dejections may transmit Cholera, the corpse of a Cholera patient, with all that it contains retains the same property.

In this state of doubt, the Commission replies; *Although it is not proved by conclusive facts that the corpses of Cholera patients can transmit Cholera, it is prudent to regard them as dangerous.*—(Adopted unanimously, except by M. Sawas, who abstains from voting.)

OF THE INFLUENCE OF MEANS OF COMMUNICATION.

After having studied and defined as far as possible the part borne by the principal agents to which the importation of Cholera can be attributed, it is right to examine at present the part which is borne by means of communication in the propagation of epidemics.

XVIII.

What influence do the different modes of communication, by land and by sea, exercise on the propagation of Cholera.

The progress of epidemics has made us see that the propagation of Cholera always takes place in the direction of human currents; that the more active and multiplied communications are in a country, or from one country to another, the greater is the tendency to the wider propagation of the disease; and that the more rapid the means of transport are, the more rapid is its extension. We have quoted facts in support of these propositions and need not return to them.

Of all modes of transport, the most dangerous, and the most adapted to import the disease, though not the most rapid, is maritime transport: because a ship may contain within it all that constitutes a choleraic focus. It may not only convey an entire epidemic, but it carries with it conditions of confinement and infection the most adapted to the transmission of the disease. A ship infected with Cholera may, therefore, be considered, we say, as the surest means of propagation, and the shorter its voyage the more is it to be feared.

Railway communications, though capable of carrying the disease with greater rapidity from one place to another, as was seen in the last epidemic, are yet not so adapted to propagate an epidemic with such certainty. This has been demonstrated by experience, and may be reasonably understood. Railways have very seldom to convey Cholera patients, and the population which takes to flight by this means from an infected locality does not generally belong to the classes more particularly liable to be stricken by Cholera. These circumstances, joined to the free ventilation and to all the other causes of extinction of the choleraic

principle in such a journey, counterbalance and more than counterbalance the danger resulting from the number of travellers. Let us hasten to add, however, that next to means of transport by sea, railways are incontestably the most active agents in the rapid extension of epidemics; and it must be admitted that, under certain conditions (the conveyance of troops for instance) they may be the cause of the certain propagation of the disease. The development of Cholera at Alexandria after the arrival of the pilgrims by train from Suez affords us the proof of this.

In consequence, the Commission replies that maritime communications are, from their nature, the most dangerous; that they propagate Cholera to a distance most surely, and that next to them are railways, which, in a short time, can carry the disease to a great distance.—(Adopted unanimously.)

XIX.

What is the influence of deserts on the propagation of Cholera?

Amongst all the means of communication between one country and another, one especially deserves attention, because, far from favoring the propagation of the disease, it has never served as a conducting agent in its progress: we mean communication across great deserts by means of caravans. Experience, going back as far as the first appearances of Cholera beyond India, has taught, in fact, that a great desert is the best of all obstacles to the propagation of Cholera. It has demonstrated that not only has such a space never been cleared at a bound by the disease, but also that a large caravan, starting from a place where Cholera is raging, gets rid of the disease gradually in its progress through the desert and arrives entirely purified, provided its journey is more than twenty days in duration. The Ottoman Sanitary Administration possesses very valuable information on this point. The caravan of pilgrims leaving Mecca while the town is a prey to Cholera (and this circumstance has often been repeated) has never yet carried the disease to Damascus. Documents prove that when this caravan has quitted Mecca with Cholera in its midst, the disease has always died away within a week or two of its journey. The same may be said of the caravan leaving Mecca to return to Egypt viâ Suez: this latter also has never carried Cholera into Egypt; and it has been proved that if, in 1831, this disease was carried there by pilgrims on their return from Mecca, those who returned by sea were the importing agents and not the caravan, which arrived later.

The same remark is applicable to the journey across the deserts separating Bagdad from Damascus and Mecca; and when, in 1823, and later again in 1847, the Cholera, coming from Persia, advanced to the north of Syria, it went up the Tigris and Euphrates, by Diarbekir, Orfa, Biredjik, and not across the desert. An assertion to be found in the very respectable work of Verrollot on the march of Cholera in 1845-46, and 1847, would seem to prove an exception to this rule. Verrollot supposes that Cholera was imported into Mecca in November 1846, the time of the pilgrimage, by the Persians who had come from Kerbela, basing his opinion merely

on the fact that Cholera was raging at Kerbela in August of that year; but he forgets that the disease had existed at Jeddah since May, and that it is much more reasonable to suppose that the Cholera spread from that town to Mecca, where it became fully developed at the time of the pilgrimage. The opinion of Verrollot then is not such as to invalidate a rule established by long experience. Let us add that the same rule holds good in regard to the deserts on the north of Africa, having been found by our colleague, Dr. Dickson, to exist during the epidemics of 1850 and 1855, when the Cholera never spread beyond three stages of the journey across the desert, and also that it has been similarly proved, by observations made by Dr. Byrne, to exist in the United States of America.—(*Essay on Cholera*, 1855.)

It may be said then that it is a well established truth that a great space, a desert, where the people are scattered and have but little communication with each other, is the best of all barriers against the importation of Cholera, and that, when the disease penetrates to it, it evaporates as it were and is rapidly extinguished. Thus, free air, the atmosphere through which it has been supposed the principle of Cholera is able to pass to great distances, is, on the contrary, the purifier and destroyer of this principle.

The Commission, relying on facts established by experience, concludes that great deserts form a very efficacious barrier against the propagation of Cholera, and declares its conviction that in no instance has the disease been imported into Egypt or Syria, across the desert, by caravans from Mecca.

(Adopted by all the members of the Commission, except MM. Monlau, Pélikan, Polak, and Van-Geuns, who have abstained from voting.)

Of the influence of Assemblages.

XX.

What is the influence of assemblages of men on the intensity of epidemicr of Cholera, as well as on the propagation of the disease? Undes what conditions does it exercise this influence?

To solve these questions, it is necessary to regard this influence as it displays itself on board ships, in lazarettos, in armies, in fairs and in pilgrimages, and notably in the pilgrimage to Mecca. On the other hand, it is necessary to show the influence of dissemination, both as a means of diminishing the intensity of choleraic epidemics, and as a means of propagating them.

But before passing to the detailed study of these different points, the Commission thinks it is able to reply, at once, in a general way, to the questions proposed, that *every assemblage of men amongst whom Cholera is introduced, is favorable to the rapid extension of the disease; and, if an assemblage is in a bad hygienic condition, to the violence of the epidemic which breaks out in it;*

That in such cases the rapidity of the extension is proportionate to the concentration of the assembled masses, while, cæteris paribus, if the individuals composing the assemblage have been but slightly under the influence of Cholera, or if they have been exempt from it, the greater is the violence of the epidemic, that is, in other words, that individuals who have already been under the influence of a choleraic focus enjoy a sort of comparative and temporary immunity which counterbalances the grievous effects of the assemblage;

And lastly, that in an assemblage the greater the extension of the epidemic the more speedy will its cessation be, provided there are no fresh healthy arrivals to furnish the disease with more aliment, and thus keep it in existence.—(Adopted unanimously.)

Nobody can fail to see the importance of some of these propositions. They maintain the very remarkable fact that the greater the concentration of an assemblage, the speedier is the propagation of Cholera, as well as its final extinction, no matter what may be the conditions of the locality. Experience demonstrates that, under these conditions, Cholera, after having carried off a number, more or less considerable, of victims—the number, however, never rising above a certain proportion—is promptly extinguished in consequence of the immunity enjoyed by the survivors. The practical result of this fact is that when Cholera shows itself in such a place, there is no reason to fear its continuance there beyond a certain time, or the destruction of an indefinite number of victims. It remains now to be demonstrated that these conclusions, which are applicable generally to all assemblages, are justified by the study of facts, considered with regard to every kind of assemblage.

XXI.

What is the intensity and the continuance of epidemics of Cholera on board ships?

The conditions under which people are collected on board a ship are, there can be no doubt, the most favorable to the rapid development and violence of choleraic epidemics. The narrow and badly ventilated space, the impossibility of sufficiently isolating the sick, the infection resulting from this, cause a ship crowded with men to constitute a place the most adapted to favor an epidemic and apparently to sustain it. It need not be said that the greater the crowding, and the worse the sanitary conditions, the greater fear is there of the probability of a violent epidemic. On this head experience agrees with reason.

It does not follow at all, however, that every ship, with an equal number of passengers, runs the same risk in the event of an attack of Cholera. It is necessary to make a distinction in this respect between vessels coming from a choleraic focus, that is to say, which have on board individuals who have been staying for a time, more or less, in a locality where Cholera has been raging, and ships having on board a crew and passengers exempt from all choleraic influence, and who have just placed themselves in contact with places or individuals tainted with Cholera.

First as regards ships leaving an infected place, though the crowding may be very great, if Cholera breaks out on Board, ordinarily it carries off only a small number of victims during the first few days of the voyage, and, if the voyage is prolonged, it is extinguished, not to reappear. Most often indeed Cholera, properly so called, does not show itself on board.

The proof of this has been given in the most convincing manner during the last epidemic.

Thirty-three steamers and 112 sailing vessels arrived in the Dardanelles last year during the epidemic in the course of a month and a half, most of them having come from Alexandria. On these vessels there were not, during the entire voyage, more than 5 deaths, and about 16 men attacked by Cholera, who were taken to the lazaretto. The crews of these ships numbered altogether 3,058, and more than this number of passengers, of whom 2,268 entered the lazaretto. The number of those who passed through quarantine on board is not indicated. This makes altogether a total of more than 5,326 men, without reckoning those who remained on board, furnishing 5 deaths besides 16 attacks, which occurred for the most part on board the steamers.* We shall see further on what passed in the lazaretto.

What we say of the arrivals in the Dardanelles has been observed, in almost the same proportion, in all the ports of the Ottoman Empire. The report of Dr. Bartoletti on the march of Cholera in 1865, leaves no doubt in this respect. We may add that it has been the same in every place where there have been arrivals from Alexandria, and particularly so at Marseilles, where scarcely any cases of Cholera were observed on any of these ships, bringing as they did, within a short space of time, such a large number of fugitives to the town.

The same fact was remarked at the commencement of the war in the Crimea. The ships from Marseilles, which brought the first infected troops by whom cholera was spread, had only a few cases on board during the voyage, notwithstanding the enormous crowding.

In 1832, while Cholera was raging in England amongst the numerous vessels, which carried 33,000 passengers to Quebec, only two, the *Carrick* and the *Royalist*, had any cases of cholera on board during the voyage.

It is then a general fact that ships coming from an infected locality, and having on board individuals who have made a stay in that locality, are not often made a theatre for choleraic manifestations, and if the disease breaks out on board it is generally of very small extension, even in case of crowding. It is proved, besides, that ships leaving a place during the progressive period of an epidemic have most sick on board.

* The vessels named as having had Cholera on board are the *Archiduc Maximilion*, arrived 30th June, 2 cases 1 death; *Mirra* 2nd July, 1 death; *Charkie* 7th July, 1 case; *Minia*, 8th July, 2 deaths, *Djaferieh*, 5 cases landed on the 14th and 15th; *Tamise*, 22nd July, 2 cases, *Eiling*, sailing vessel, 22nd July, 1 death. The other vessels completing the 16 sick persons landed are not mentioned.

If we had relied on information received from Egypt, there would have been an exception to this rule last year. The masters of the vessels which carried the pilgrims from Jeddah to Suez declared, on their arrival, that they had had no cases of cholera on board during the voyage. Now this declaration has been found to have been false; but some go even further and assert that one of these vessels, the *Sydney*, carrying 2,000 pilgrims, lost more than 100 during the voyage.* This is only a supposition, which was not verified. May we not be permitted to believe that there was concealment on the one hand and exaggeration on the other? Be this as it may, it is, after all, an exception which may be easily explained; besides the Commission does not pretend that there are no exceptions to the rule laid down above. A certain number may be quoted, capable of being differently interpreted, but they do not in the least invalidate the general rule.†

As for ships having on board an assemblage which has never been subjected to any sort of choleraic influence, if the disease shows itself on board, as a rule it rapidly develops itself and the epidemic is more severe than on the others, going through all its phases in a short time, and to a certain extent, proportioned to the concentration of the people on board.

The history of the epidemic of cholera which raged on board the French fleet in the Black Sea in 1854 offers a remarkable example in support of this proposition. This epidemic, an excellent account of which has been given by Dr. Marroin, chief physician to the fleet (*Paris*, 1861,) shows that cholera effected its entrance into the Black Sea on the 13th and 14th July, with the *Primauguet* and the *Magellan*, from Gallipoli. The importation first took place at Varna, whence the disease spread to the army on land. Up to the 22nd July, with the exception of the two ships in question, the fleet, the greater part of which was anchored off Baltchick, remained uninfected; but from that date cases of cholerine and some few attacks of cholera occurred on board several vessels. This state of things continued till the 7th August, when the division under command of General Bosquet, which was being ravaged by cholera, went into camp at Baltchick. Frequent and necessary communications at once commenced between the camp and the squadron. Two days afterwards cholera broke out with extreme violence on board the ships. It must be added (for in such matters if every thing is not said, some reason will be given for the opinion that certain things are not admitted) that two vessels, the *Friedland* and the *Jean-Bart*, on their return from a cruise round the Crimean coast, had each a

* The captain of the *Sydney*, who was recently questioned at Jeddah, has just declared that last year he threw overboard only 8 bodies (deaths from Cholera) in his voyage to Suez.

† The most remarkable, perhaps, of these exceptions are to be found in the two ships *North Wind* and *Persia*, which, leaving Singapore in December 1864, for Jedda, lost from Cholera, during the voyage, the first 50 men out of 632 and the other 93 out of 530 persons on board. But the question under discussion is precisely to know whether Cholera had broken out on board these ships in the voyage from Singapore to Mokalla, in which case they must have imported the locality into this latter place; or whether, on the contrary, they contracted Cholera while they were lying to off Mokalla. Under the latter supposition these ships should be placed in the category of those which have never been subjected to choleraic influence, and they would present nothing but what is very common

case of cholera on board before they had any communication with the land or with the fleet. This fact may be interpreted as people like: let us return to the vessels anchored off Baltchick.

From the 9th August, the epidemic assumed great proportions: in three days it attained its maximum of intensity, and terminated at the end of ten days. During this time, the five vessels on which it raged most severely lost altogether 456 men from cholera; and in eight days, the entire fleet lost 800 out of an effective force of 13,000 sailors. From this time to the conclusion of the war, there were only isolated cases of cholera and slight passing outbreaks on board the French fleet, and these occurred principally on board ships conveying troops not yet acclimatised.

If pains are taken to consult all known facts, it will be seen that all or nearly all of the severest epidemics of cholera on board ships have been observed in ships carrying a large number of men who have never, previous to their embarkation, been under the influence of choleraic focus.

But it must not be concluded, from the distinction which we have made in accordance with experience, that ships which have left an infected locality and which have accomplished their voyage without accidents, or with only a few cases of cholera more or less distinctly characterised, and which appear quite innocuous, are altogether exempt from the danger of importing cholera: no, this would be a dangerous error. It was believed for a considerable time, and apparently with reasons, that this was the case; but the facts observed last year no longer admit of the belief.

The great majority of the ships leaving Alexandria had no cases of cholera on board during their voyage. Did they not, nevertheless, propagate the disease, even in the absence of proof of any choleraic accident on board? If they did, how was it done? We cannot say exactly; but it is certain that they spread the disease, for the *decisive* reason that cholera showed itself only where they touched.

Here we come to the question raised by the development of the terrible epidemic of cholera which raged last year in Guadaloupe. We have only two theories to select from: either cholera developed itself spontaneously in the island, and this would be a fact hitherto unexampled out of India; or it was imported. But how could it have been imported? Could it have been by the winds blowing across the Atlantic, when we know that cholera cannot even pass across a desert not nearly so wide as the Atlantic? or could it have been by a ship? If so, what ship was it? Was it, as was at first pretended, the *Virginie*, which left Marseilles on the 3rd September (that is, during the epidemic) and arrived at Pointe-à-Pître on the 9th October, after a voyage of 36 days, without having shown, as we are assured, a trace of cholera on board? It is to be remarked that the outbreak of cholera in Guadaloupe did not occur till the 22nd or 25th October, while the ship was unloading. Or rather was it, as was said afterwards, the ship *Sainte-Marie*, which was

the means of the importation? This latter vessel left Bordeaux on the 15th September, with a clean bill of health, and when there was no cholera in the town. But it was asserted by those who attributed the importation to this vessel that there were on board sailors who had come from Marseilles, and that two men had died of Cholera during her voyage from Bordeaux to Pointe-à-Pître, where she arrived on the 20th October, and that the disease must have been communicated in the first instance to two washerwomen who had washed the foul linen of her crew. Now, official information has proved to us that the two sailors in question did not come from Marseilles, and that there was no cholera on board the ship. This version then loses all value.

There remains the first version, according to which the disease must have been imported, after a long voyage, by a ship coming from an infected locality, but which had had no choleraic accident on board. Whatever the value of this version may be, and the Commission is unable to pronounce on the point, it not the less follows, *and this is the capital fact*, that cholera did not break out at Guadaloupe until after an arrival from a locality infected by cholera. The circumstance that similar arrivals in other places have not been followed by the same result, proves nothing against the importation in this instance; it proves simply either that the analogy was not complete, or that in those cases the conditions favorable to transmission did not exist.

Upon the whole, *the Commission replies that the intensity of epidemics of cholera on board ships crowded with men is, in general, proportionate to the crowding, and is all the more violent, cæteris paribus, if these men have not come from a choleraic focus; that in crowded vessels the progress of epidemics is generally rapid; and, finally, the Commission adds that the danger of importation by ships and that of the outbreak of a grave epidemic are not entirely subordinate to its intensity, nor even to the occurrence of choleraic accidents on board during the voyage.*— (Adopted unanimously, except by M. Monlau, who abstained from voting.)

XXII.

What influence does the assemblage in lazarettos of individuals coming from a choleraic focus exercise on the development of cholera among the individuals in quarantine and in the neighbourhood of lazarettos.

The question of the influence, on persons in quarantine who have come from a choleraic focus, of assemblages in lazarettos is most interesting as a study; it originates in a fear frequently expressed that Cholera may effect great ravages among persons placed in quarantine. We can reply, at once, that this fear is in no way justified by the facts. What occurs in lazarettos is exactly what occurs on boardships, that is, when individuals who are thus gathered together, have, previous to their entrance into the lazaretto, been subject to choleraic influences, they possess a sort of immunity which in the immense majority of cases cannot be overcome by the bad effects of the crowding. We give some facts here in proof, extracted from Dr. Bartoletti's work on the march

of Cholera in 1865. During the last epidemic of Cholera, most of the Turkish lazarettos were crowded by masses of fugitives who had fled from places attacked by Cholera. We have been able to obtain precise details only in regard to eleven of these lazarettos, but these eleven are the most important, and the results they show are all the more significant that in every one of these lazarettos, cases of Cholera occurred among the persons performing quarantine. In many instances the crowding was immense, principally at the Dardanelles, at Beyrout and at Trebizond. These eleven lazarettos received altogether 25,819 persons, of whom 480 were attacked by Cholera, 238 cases resulting in death. Reckoning the deaths merely, this would only give a proportion of less than 1 per cent. It must be added that a great many of the attacks were not developed in the lazarettos, but that the individuals affected were already sick when landed. Thus in 9 lazarettos, in regard to which we have details, we find that out of 185 cases, resulting in 101 deaths, 67 had Cholera before they were landed. This, it will be seen, very much reduces the number of cases which can be attributed to the crowding in the lazarettos.

The following table drawn up from facts collected by Dr. Bartoletti, is in support of what we say:—

Table showing the number of persons admitted into the principal Turkish Lazarettos during the epedemic of 1865, *with the number of cases of Cholera and the number of deaths that occurred in them.*

Lazarettos.	Number of Persons admitted.	Cases developed before entrance into the Lazaretto.	Cases developed in the Lazaretto.	Total Number of Cases.	Number of deaths in the Lazarettos.
Dardanelles	2,268	16	6	22	15
Smyrna	1,701	...	14	14	9
Salonica	4,257	not known	not known	265	122
Volo	2,265	5	57	62	23
Beyrout	3,200	not known	not known	30	15
Cyprus	1,199	19	3	22	7
Crete	778	3	11	14	10
Benghazi	812	...	1	1	1
Trebizond	5,073	1	20	21	19
Samsoun	3,170	18	6	24	12
Bourgas	1,096	5	...	5	5
Total ...	25,819	67	118	480	238

It will be remarked in this table, a very strict examination of which, however, is not necessary, a glance being sufficient, that the number of attacks developed in these lazarettos, and that of deaths, are not always in proportion to the number of persons placed in quarantine; at Benghazi, for instance, there was only one case among 812 persons in quarantine, while at Volo there were 57 out of 2,265, so that it is impossible to decide conclusively as to the influence that crowding has on

the proportion of attacks. To decide this, details would have been necessary, which unhappily are not available, of the condition of the persons in quarantine in each lazaretto. These details have, for the most part, not been furnished, notwithstanding a special circular on the subject from the Turkish Administration.

The Office of the Dardanelles only has furnished the required information on this head. We find that there were as many as 900 individuals at a time in this lazaretto; showing considerable overcrowding, having reference to the capacity of the establishment. In this state of things, however, which did not permit of the isolation from each other of the different categories of persons in quarantine, from the 29th June to the first days of August, there were not more than six cases of Cholera developed in the lazaretto among 2,268 persons. Nevertheless, as we shall see further on, the disease spread from the lazaretto to the town, causing dreadful havoc there.

It would have been very interesting to know what occurred at Salonica, in which place a mass of fugitives hurrying from Constantinople crowded together in a very short space of time, from the middle of July to the middle of August. The lazaretto, which was near the town, was so crowded, that the alarmed population called for the expulsion of many new arrivals, part of whom set out for Volo, and in addition compelled the local authorities to establish a new lazaretto at a great distance from the town. But how many Cholera patients were landed at the first lazaretto (for it was there that almost all the cases occurred)? How many attacks were developed in the establishment? We have no documents to tell us. We only know that nine persons employed in the lazaretto were included in the number of deaths, an enormous proportion as compared with the number of persons in quarantine.

Be this as it may, it not the less follows from the preceding table, and this is all we mean to deduce from it, that Cholera was only very slightly developed among the occupants of the Turkish lazarettos, although the crowding was considerable.

It remains to be seen now what took place in localities more or less in the vicinity of these lazarettos.

At the Dardanelles, at Smyrna, at Cyprus, at Beyrout, at Trebizond, at Kustendje, and at Sulina, Cholera spread from the lazaretto to the neighbouring town, or, at any rate, developed itself in the town subsequent to the admission of Cholera patients into the lazaretto. It would be very interesting here to be able to say exactly in what manner things proceeded in each of the above-mentioned localities; but the want of precise information does not permit of it. It may be understood besides how many interests there are, in the greater number of cases, conflicting with the knowledge of the truth. Still, at Smyrna and Larwaca (Cyprus) and especially at the Dardanelles, it was found possible to follow up the connexion of facts and to demonstrate the passage of the disease from the lazaretto to the town.

This is what took place at the Dardanelles: several cases of Cholera had been admitted to or developed in the lazaretto since the commencement of July, and on the 12th a soldier on guard at the gate of the establishment was attacked by the disease, and was taken to the neighbouring hospital, where he sank rapidly. The next day there were eight cases of Cholera, *viz.*, two amongst the soldiers on guard at the gate of the lazaretto, 3 amongst the garrison of the fort touching on the establishment, one in the town (about an hour's walk from the lazaretto by land, but much closer by sea,) in the person of a Health Officer who had come from the lazaretto two days previous, 1 in another quarter of the town, in the person of an individual who sold cakes and sweetmeats every day at the lazaretto, and finally one in the person of a boatman attached to the Health Office. Such was the starting point of the epidemic, which afterwards broke out in the town and ravaged it severely, as may be seen from the following figures: Out of a population of 8,000 souls, rapidly reduced to 6,000 by emigration, there were, from the 12th July to the 2nd September, 344 deaths from Cholera not including 25 deaths amongst the garrison of the forts, *i. e.*, nearly 6 per cent. of the population.

In this instance, therefore, the mode of propagation is not doubtful; and it is to be noted that while not more than 6 attacks amongst 2,268 individuals were developed in the lazaretto, the town, on the contrary, was cruelly ravaged. Does not this show that persons in quarantine enjoy a sort of comparative and acquired immunity?

At Smyrna the propagation from the lazaretto to the town is less evident. The first ship from Alexandria with a foul bill of health arrived on the 23rd June, and on that day a cholera patient was landed at the lazaretto. But it must be said that, before this arrival, there had been others, which had also left Alexandria after the appearance of cholera in that town, and which had been admitted with a clean bill of health, in accordance with the rules, having nothing suspicious on board, and having accomplished the voyage in five days. Be this as it may, the first case of cholera observed in the town of Smyrna took place on the 24th June, the person attacked being an Armenian female; other cases followed, at rare intervals at first till the 11th July, and then in quick succession, until during the grestest intensity of the epidemic, from the 30th July to the 7th August, the daily mortality was as high as 80.

It cannot be maintained that at Smyrna, cholera spread from the lazaretto to the town, although they are contiguous; but it is not the less remarkable that the persons in quarantine suffered much less from cholera, considering their relative proportions, than the inhabitants. Thus it has been estimated that the mortality in the town amounted to about 2,500 in a population reduced to 100,000, that is 1 in 40; while amongst the 1,701 occupants of the lazaretto, there were only 9, or 1 in 189.

In regard to Larnaca, all we know is that the lazaretto is very near the town, and that, from the 24th June to the 18th July, 1,199 people

were admitted to quarantine, of whom 19 had cholera before admission, and 3 were attacked subsequent to entering the lazaretto. On the 7th July the first case in the town took place, the man attacked being the keeper of a café, who had lodged several persons after they had quitted the lazaretto. Thence the disease spread through the town, and afterwards through the island.

In regard to Beyrout, the information we possess shows that from the 17th June to the 25th July, 3,200 persons, coming from Alexandria, were subjected to a quarantine of from 5 to 10 days, either in the lazaretto, a well ventilated establishment but too small for so many people, or in isolated houses on the sea coast on the other side of the house. The crowding, nevertheless, was very great, and a time arrived when the persons in quarantine, who could no longer be kept in, openly broke bounds. But cholera already existed in the town. The first case took place on the 1st July on the person of a man named Farrah, who had not apparently been in communication with the lazaretto where the persons infected with cholera were confined. The second case in the town took place on the 3rd July, the person attacked being the Abbé Viale, Secretary to the Patriarch of Jerusalem, on the very day he left the lazaretto, where he had undergone a quarantine of ten days. He died in a few hours. Notwithstanding this fact, it is impossible to establish a precise relation between the lazaretto and the first person attacked in the town. The epidemic which followed was not very severe at Beyrout, for during three months, out of a population reduced by emigration to 50,000 souls, there were not more than 593 deaths, or 1 in 88; but even here the proportion is much greater than among the occupants of the lazaretto.

There are no documents available from which any definite conclusion can be drawn with regard to Trebizond. Cholera, however, was but very slightly developed in this town, which the year previous had suffered so much from typhus.

At Sulina, the ravages of cholera were dreadful, and two cases had occurred among the occupants of the lazaretto before it broke out in the town. This is all that we can draw from the information we have received.

To sum up: the propagation of cholera from the lazaretto to the town is incontestable in regard to the Dardanelles; it is very probable, so far as Larnaca is concerned, and is doubtful in respect to the other places mentioned above.

Amongst the localities comprised in the table, six were spared by the cholera, and two of them, Salonica and Volo, deserve special mention.

At Salonica, where, as has been seen, fugitives assembled from various parts, we find circumstances very favorable to the propagation of the disease: considerable over-crowding (amounting to 1,300 at a time) in the lazaretto situated near the town, and a great number of [redacted]a cases (265) in the establishment. It is true we are told that

these cholera patients were carefully isolated from the other occupants of the lazaretto (what such an isolation was may easily be imagined) and that afterwards the lazaretto was removed to a great distance from the town; but it is not the less certain that almost every case of cholera took place in the first lazaretto, and that, notwithstanding the isolation, attacks of cholera were more numerous at Salonica than any where else. There is even something more to be added: an individual who breke bounds after having undergone 14 days of quarantine, must have, according to an account worthy of credit, been seized by cholera four days afterwards in the town. This attack, resulting in death, was followed by two other cases, one of which was fatal, in the same house, which was immediately put in quarantine. Be this as it may, Salonica was spared. Whatever may be the explanation given of this fact, it deserves to be recorded. Nevertheles, several villages in the vicinity of Salonica, to which several persons who had come out of the lazaretto had gone, were not so fortunate; cholera showed itself in them with great intensity.

Volo in a manner received the superabundance of those who should have gone into quarantine at Salonica: 1,649 out of 2,265 passengers on board ships were landed there on a desert islet and placed under canvas; 62 attacks, 23 of which resulted fatally, took place among these people from the 26th July to the 10th August. The town was saved; although the writer in the Health Office was attacked and died beyond the limits of the lazaretto, and the physician of that establishment himself attacked sought refuge in the town; but the disease showed itself in many villages from five to ten miles distant from Volo, where, 42 days after the last case observed in the lazaretto, an individual coming from one of these villages was attacked. Thus, with a few exceptions, the epidemic spared the town of Volo.

We conclude these details with some particulars about Rhodes and Crete.

Rhodes received no less than 2,618 persons, who went into quarantine during the course of two months, dating from the 19th June. Considering the smallness of the lazaretto, they were for the most part placed under canvas, under favorable conditions. On the 20th June, one of the people in quarantine, who had landed the day before from an Egyptian ship from Alexandria, and which had had no cholera patients on board, fell sick of cholera and died the same day. The other passengers by this ship, to the number of 86, were removed elsewhere under tents, and completed ten days of quarantine without any accidents. It was the only case of cholera observed at Rhodes during the period of quarantine. The island was altogether spared.

The island of Crete, during the course of about two months, received 972 persons into quarantine (not including the crews), of whom 184 remained on board and 788 passed through quarantine in three islets of the Gulf of the Suda, where tents and barracks had been erected. The surveillance was very strict: all communication between one islet and another was interdicted. The quarantine was to last for ten days,

and in the event of cholera, it was to be prolonged for ten days more after the occurrence of the case. Two ships, coming from Alexandria, brought with them cholera patients. One, which arrived on the 28th June, had had two fatal cases in port. Amongst the passengers landed, amounting to 250, there were, during this period of quarantine, 8 cases and 4 deaths, to which must be added the death of a guard of health. The other ship, a Turkish brig, arrived on the 27th July with 58 passengers on board, the greater part consisting of workmen from Suez. She had had 5 cases on board during the voyage. Only one of the sick men was landed at the lazaretto. Amongst these passengers, from the 7th of August to the 3rd of September, 5 deaths took place from Cholera. It is to be noted as most remarkable that not only did the Cholera not spread to the island of Crete, but also that there were no cases of Cholera among the persons in quarantine, except among the passengers from on board the two ships just mentioned, and who it is true had been placed apart from all others and from each other on two different islets.

We shall not proceed any further with our quotations. It is only necessary to add that the duration of quarantine in the Turkish lazarettos was not always the same; at first it lasted from 5 to 10 days, according to regulations, and accordingly as a ship had or had not had any cases of Cholera on board during the voyage; it was soon extended generally to ten full days in every case and to a still further period in some places. This is not the place in which to dilate on the value to be attached to this duration.

From all that has been said, the Commission concludes *that the assemblage in a lazaretto of individuals coming from a place where Cholera is raging does not tend to produce the extension of the disease among the persons in quarantine, but that such an assemblage is not the less very dangerous to the neighbourhood, in so far that it is adapted to favor the propagation of Cholera.*—(Adopted unanimously, with the exception of M. Monlau.)

XXIII.

What influence do great assemblages of men, armies, fairs, pilgrimages, exercise on the development and propagation of epidemics of Cholera?

The remark made with regard to ships is applicable to all great assemblages of men having peculiarities similar to the *various* conditions of the former.

When Cholera penetrates amongst a body of troops, in a concentrated army, until then free from all choleraic influence, it developes itself rapidly and rages in proportion to the hygienic and moral conditions of the army, and the epidemic passes through all its phases with a good deal of rapidity, though not quite so speedily as it does on board a ship. It is also rapidly extinguished provided there are no fresh arrivals, hitherto unsubjected to choleraic influences, to feel the disease and give it new life. In this event, those who have already been

attacked suffer much less proportionately than the new comers, in consequence of their enjoying a sort of comparative and acquired immunity. Numerous instances might be brought forward in support of this theory. We shall content ourselves with quoting what was observed in the French army during the Crimean war.

The first invasion of the army by Cholera, at Gallipoli and at Varna, was terrible; but it was a kind of hurricane which, in the course of a month, left only a few scattered traces of its presence. The disease, however, never completely disappeared until towards the end of the war, and from time to time it broke out afresh, and always when fresh troops arrived. These latter always suffered more or less largely at these time; a few of the more weakly amongst the more experienced troops were also striken down, and then the disease subsided.

A very remarkable example will show how fresh troops may re-animate an epidemic believed to be extinct. In the commencement of April 1855, 15 to 20,000 troops, consisting in part of the Imperial Guard, arrived at Constantinople from France. There had not been a single case of Cholera amongst these troops during their voyage. They were encamped on the heights of Maslak, a well chosen site in a hygienic point of view. At this time there were only some very rare cases of Cholera in Constantinople. The statements of the French military hospitals did not show more than 53 cases for the month of March. The statement for the 10th April showed none. In the Crimea, at the same period, cases were equally rare. The troops in question were scarcely settled at Maslak when the disease burst out among them on the night of the 14-15th April. It must be said that for some days before cases of diarrhœa had become numerous in the camp. A rather severe epidemic followed, which rapidly declined but accompanied the troops to the Crimea, where they arrived in the beginning of June, and where their arrival was marked by a fresh and serious outbreak of the disease. It must be added also that from the camp at Maslak the disease spread to Pera and to those villages on the Bosphorus which were nearest the choleraic focus.—(*Extracted from official documents.*

As for the propagation of Cholera by armies or bodies of troops in motion, it is a fact so well known, that it is unnecessary to go into much detail on the subject. It suffices to bring to mind the war in Poland in 1831, which was the great cause of the rapid propagation of Cholera in Europe; the circumstances of the civil war in Portugal in 1833 (*Gomès*), when Cholera was transmitted to the province of Algarves and to the towns of Torres Vedras, Caldas, Leiria, and Coimbra, by the movements of troops. According to information furnished by Dr. Lenz, during the epidemic of 1847 and 1848, in Russia, Cholera was frequently imported in countries, hitherto untainted by troops coming from an infected locality. Thus, in 1847, the disease was transmitted to Kisliar by a troop of soldiers from Temir-khan-Choury; in 1848, in the government of Smolensk, by two regiments of hussars from Moscow,

who communicated Cholera not only to the towns where they left their sick, but even to the villages where they had made only a single night's halt. The same thing has been observed in connexion with the movements of troops in India. In the governments of Nijni-Novgorod, Kostroma, Jaroslav, and Vladimir, all the local authorities attributed the rapid propagation of Cholera, in the spring of 1848, when the navigation of the Volga was opened out, to the masses of men employed in towing boats, and who, being the first who were attacked, took to flight in all directions.

Fairs, like all great assemblages, have the effect, on the manifestation of Cholera in them, of creating great foci of infection, with this aggravating circumstance, when compared with armies, which at any rate always remain more or less compact, that when the infected crowd disperses in every direction, it tends to spread the disease on all sides. We can quote, as having had this effect, the fair of Tuy which in 1855 spread Cholera in the province of Minho in Portugal *(Gomès)*; that of Samara, whence Cholera was propagated to the government of Orenburg *(Lenz)*; the great fairs of India and notably that of Hurdwar, of which we have spoken in connexion with pilgrimages; and, lastly, that of Tantah in Egypt, which, in 1848, contributed greatly to the propagation of Cholera. We must say, however, with regard to the Tantah fair, that having taken place this year shortly after the Cholera epidemic, it did not produce any serious effect on the public health; thus confirming what we said before regarding the comparative immunity enjoyed by an assemblage which has just been under the influence of an epidemic of Cholera.—(*Communication from Dr. Salem Bey.)*

Lastly, so far as pilgrimages are concerned, we have said enough in detail, in connexion with Cholera in India, to enable the reader to appreciate the important part performed by assemblages of this nature, in choleraic and similar epidemics. We shall besides return to it further on when we speak of the pilgrimage to Mecca.

Thus great assemblages of men contribute greatly to the rapid development of epidemics of Cholera; they constitute foci of choleraic dissemination, and by their dispersion and their emigrations to localities hitherto uninfected, they favor the propagation of the disease, for the importation of a single case of Cholera into a healthy locality suffices for the development of an epidemic there, as was proved at Altenburg, and this development is, *à fortiori*, rendered more probable by the arrival of hundreds of infected individuals.

The Commission concludes then *that great assemblages of men (armies, fairs, pilgrimages), are one of the surest means of the propagation of Cholera; that they constitute great epidemic foci, and whether they march after the manner of an army, or are disseminated like fairs and pilgrimages, carry the disease into the countries through which they pass; that these assemblages after having undergone, in an ordinarily rapid manner, the influence of Cholera, become much less sensitive to it, and that the disease disappears very promptly, provided there are no fresh arrivals to keep it alive.*—(Adopted unanimously.)

XXIV.

What is the influence of dissemination on the intensity and development of epidemics of Cholera?

What has been already said shows that the dissemination of choleraic foci in healthy localities is an almost sure means of the propagation of the disease, and we need not return to the subject; but, on the other hand, experience proves that the dispersion of an assemblage where Cholera has penetrated is a measure adapted to lessen the violence of the epidemic, to diminish the number of attacks in the assemblage, provided the dispersion does not take place too late, and is effected immediately on the appearance of the disease. Dispersion in such cases diminishes the chances of propagation in the entire mass attacked; but it is essential to recognise that, most frequently, on account of the conditions under which it is effected, it only serves to retard the progress of the epidemic; so that, when results are compared, it is found that in the dispersed mass, where individuals are more or less separated from each other, but always in communication, the mortality is almost the same as in a compact mass; it only takes a longer time. It is evident that, in many cases, the rapid extinction of an epidemic which has greatly ravaged an assembled mass, has been wrongly ascribed to the dispersion of that mass, while it was merely the consequence of the natural evolution of choleraic epidemics in such cases.

Be this as it may, dispersion, effected in good time, has produced favorable results which cannot be denied, and it could not be two strongly recommended even if it merely improved the hygienic condition of individuals.

But it ought to be properly understood that such a dispersion should never be effected in healthy localities, in which it would result in the importation of the disease, while at the same time it would be of no advantage to the individuals attacked; it should, on the contrary, remain confined within the limits of the locality where the infection was developed.

In consequence, the Commission concludes that the dispersion of an assembled mass, effected in good time, may lessen the violence of an epidemic of Cholera which has just appeared, and even arrest its extension; but that such a dispersion would, on the contrary, give rise to great danger of propagation, if effected in localities hitherto untainted.— (Adopted unanimously.)

XXV.

What is the part performed by the pilgrimage to Mecca in the epidemics of Cholera which have occurred up to the present day?

The part appertaining to the pilgrimage to Mecca, in connexion with assemblages of men, has already been sufficiently indicated; like all pilgrimages, this one consists of a collection of individuals from various countries and consequently, for the most part, quite free, on their arrival

in the Hedjaz, from all choleraic influence. To this last circumstance it is due that, if Cholera manifests itself in such an assemblage a rapid and violent epidemic is ordinarily the result,* an epidemic all the more pernicious because this assemblage exists in the worst hygienic and climacteric conditions. The renewal every year of individuals assembled at Mecca, on the one hand, and the habitual arrival, on the other, of pilgrims from infected countries, explain the reason of the frequency of the epidemics which have succeeded each other since 1831. The dispersion of the pilgrims, on the development of the epidemic, constitutes a danger so much the greater if it is effected with rapidity and during the hot weather. It was in this way last year, as has been seen, that the rapid dispersion of pilgrims by steamers resulted first in the rapid propagation of Cholera in Egypt, and afterwards in its dissemination in the basin of the Mediterranean. But, on the other hand, as has been said above, the dispersion of the pilgrims and their caravan journey across the desert, in almost unpeopled countries, so far from favoring the propagation of the disease, is, on the contrary, one of the best means of its extinction.

In regard now to the part performed by the pilgrimage to Mecca in successive epidemics of Cholera, particularly in India, it is to be noted that out of five epidemics which have desolated this latter country since 1831, two only have coincided with the return of the pilgrims, and then the return took place in the hot season: in July 1831 and in June in 1865. Of these two epidemics, the first, which commenced with their return by sea, was probably imported by the pilgrims, although the fact has not been clearly proved, but the second was most certainly so.

Thus then, twice only, and with an interval of 34 years, can Cholera have been imported into Egypt by pilgrims returning by sea from Mecca; although during this interval the disease often raged at Mecca during the season of the pilgrimage; but, in connexion with this, it may be remarked that the transport of pilgrims on steamers from Jedda to Suez does not go further back than the year 1858. This unfrequency, therefore, is no security for the future.

In conclusion, *the part of the pilgrimage to Mecca, as a propagating agent of Cholera with regard to the neighbouring countries of Europe* (with reference to which alone we have definite information) *has been the importation of the disease into Egypt twice at an interval of* 34 *years, during the hot season.*—(Adopted unanimously, except by M. Polak, who abstain from voting.)

* This theory would seem to be contradicted by the report of the British Consul at Jedda, who, during the six years of his residence in the town, constantly remaked cases of Cholera there on the return of the pilgrims; but were these really cases of Asiatic Cholera, or were they merely sporadic cases, such as are ordinarily observed in these countries during the summer.

OF THE INFLUENCE OF HYGIENIC CONDITIONS.

XXVI.

What is the influence exercised on the violence of choleraic epidemics by the hygienic and other conditions of a locality; in other words, what are the auxiliary cases of Cholera?

We do not think it essential to the object of our labors to dilate longer here on all the conditions which favor the greater number of epidemic diseases; we shall speak only of those which appear to have a peculiar influence on the development of Cholera.

Misery, with all its debilitating consequences, such as bad nourishment, bad dwellings, uncleanliness, crowding, &c., renders people more apt to undergo the influence of most epidemic diseases, but of none more than Cholera. The preference with which this diseases seizes upon peoples, or sections of peoples, among whom misery and wretchedness are predominant, is a fact too well known to need much argument. Next to misery, we have fatigue, excesses acting in every way in exhausting the frame, and all those morbid conditions which diminish vital resistance, particularly those which act upon the digestive organs.

All of which is, in short, tantamount to saying that Cholera preferentially attacks individuals suffering from debility arising from any cause whatever.

The Commission has not thought it necessary to lay stress upon the influence of diet, which in times of Cholera acts in two ways: either by its nutritive insufficiency, in debilitating the frame and rendering it more apt to contract the disease, or by its hurtfulness to the digestive organs (such are all substances recognised as indigestible, and notably unripe fruit, &c.), thus causing disorders which tend to produce the outbreak of Cholera.

We need not return to what we have already said on the subject of the influence of crowping: let us add only that the crowding of individuals, combined with misery and all its attendant results, constitutes one of the best adapted conditions for the augmentation of the violence of a choleraic epidemic.

Let us proceed to influences of another sort.

Temperature, Climate.—Although Cholera is not excluded by any climate, or any temperature, still it has been demonstrated by observation that in general the more or less rapid course of a choleraic epidemic and its more or less invading progress are in proportion to the elevation of the temperature; thus hot weather accelerates the march as well as the evolution of an epidemic, while winter retards and sometimes arrests them altogether. This is a general rule, remarked in every country, and confirmed by the researches of Hirsch. An exceptional instance occurred in Moscow and Orenburg, where the ravages of an epidemic of the disease were not checked by a severe winter; but such exceptions might

reasonably be attributed, in cold climates, to the mode of existence during the winter, to the manner of obtaining warmth, and to the absence of ventilation in dwellings. The only instance proving that a very severe winter does not always prove an obstacle to the invading march of an epidemic of Cholera was observed in Russia in 1830 and 1831 during the Polish insurrection, and appears to be properly attributable the the movements of great masses of troops, who were marching towards the scene of action.—*(Lenz.)*

Air.—There is no doubt that in general, confined air, or air vitiated by exhalations from animal or vegetable matter in a state of decomposition, acts in such a way as to render the human frame adapted to contract Cholera, and thus contributes to render the disease more murderous in its effects; but in the event of an epidemic, confined air acts still more disastrously, as will be seen further on, as a vehicle for the choleraic principle.

Water appears, according to experiments made principally in England by Dr. Snow, and in Germany by Dr. Pettenkofer, to contribute, under certain circumstances, to the development of cholera in a locality.

This occurs when water is impregnated with organic matter, as it is in rivers which flow past great cities, or the water of wells which receive the filtrations of a porous soil impregnated with decomposed matter, coming from sinks and even from cesspools. In times of choleraic epidemics, these waters, says Snow, are thus impregnated with the morbific principle, and as they are used for domestic purposes, propagate the disease. This opinion is supported by observations made in London, where in 1848 and 1849, the mortality ranged at 12·5 in 1,000 amongst those who made use of the water of the Thames raised by the Lambeth Company in the midst of the city; while in 1854 it did not exceed 3·4 per 1,000 amongst those who made use of water brought by the same Company from above the city; while those who continued to make use of water raised *intra murous* died at the rate of 13 per 1,000. (*Simon.*) Dr. Snow has quoted also, as a characteristic fact, the great choleraic mortality which took place exclusively among those persons in Broad Street who made use of the water of a certain pump which received the filtrations from a sink. If this water were transported to a certain distance, it would, it is asserted, communicate Cholera to a person drinking it. Analogous facts have been noticed elsewhere.

In this instance, water, like air, of which we have already spoken, would serve as a vehicle for the introduction of the morbific principle into the human frame.

But, according to most German authors, and especially according to M. Pettenkofer who has made this question the subject of the most interesting researches, it is elsewhere, it is in cesspools, latrines, and sinks, in the soil itself, that we must look for the chief receptacles of the principle of Cholera. Though the Conference need not give itself up to theories, M. Pettenkofer's theory is so supported, it is bound up with such important facts in connexion with prophylactic measures, that we

cannot put it aside. It rests on the generally admitted proposition that the alvine dejections of Cholera patients contain, in any condition whatever, the propagating principle of the disease. This proposition, laid down so far back as 1849 by Dr. Pellarin *(Gazette Medecale de Paris,)* who insisted even then on the necessity of disinfecting the dejections of Cholera patients by sulphate of iron, was corroborated by the observations of Budd, published in 1854, and by those of Snow, and finally, it may be said, placed definitively beyond a doubt by the researches of Dr. Pettenkofer. It is merely a legitimate deduction from numerous facts proving that latrines, cesspools, sinks, and accumulations of filth are the chief receptacles, whence is exhaled the morbific principle of Cholera. The facts are so well known, that it is unnecessary to mention them in detail here. These *cloacæ* would have precisely the same effect on a population that we have been led to attribute to linen and other articles soiled by Cholera patients, *i. e.*, being in a manner the natural receptacles of the alvine dejections of Cholera patients, they would become the propagating agents of the disease.

M. Pettenkofer goes much further: he considers it to be demonstrated by observation that, in an epidemic of Cholera, the very soil of the locality where the disease rages plays a great part in its development by the exhalations arising from it. He asserts that a porous soil easily permeable by water and air, and impregnated with excrementitious matter (consequently an alluvial, marshy soil especially), by being impregnated with choleraic dejections, becomes at first a receptacle, and then, according to circumstances, a more or less active focus for the dissemination of the principle of the disease. The activity of the choleraic dissemination would depend on the level of the water below the surface of the soil, and consequently would be in proportion to the greater or less humidity of the superficial stratum of the soil. This capacity of the soil for the reception of the principle of Cholera is an excellent explanation of the obstinacy of the disease in certain localities, and even of its apparently spontaneous reappearance, after a more or less complete disappearance. The truth of the doctrine in question should be verified in India, and particularly in parts where Cholera is endemic. Perhaps the result of the inquiry would afford the explanation of the endemicity. It is, moreover, a fact well known in India, and instances of which are on record, that the soil on which an assemblage of men (soldiers or others) suffering from Cholera has encamped, may transmit the disease.* Be this as it may, whether this theory is or is not completely justified by the facts, it appears to be well established that a porous soil, impregnated with detritus† such as is described by M. Pettenkofer, in fact an alluvial

* S. Rogers. Report on Asiatic Cholera (p. 18), Lond. 1848.

Scott. Report on Cholera in Madras, (p. 1112). Lond. 1849.

Dr. W. C. Maclean. Report of the Royal Commission on the sanitary state of the Army in India (Vol. 1, p. 114). Lond. 1863.

† M. Pettenkofer explains very ingeniously how conditions of soil altogether opposed may, nevertheless, conduce to the formation of partial depots of analogous detritus. He explains also by a very subtle theory, through which we shall not follow him, how exhala-

soil favors the development of choleraic epidemics; and even if all these epidemics cannot be explained by this circumstance, the rule would not be invalidated, but what would be proved would simply be that other conditions are equally favorable to the development of Cholera.

If all the hygienic conditions which have already been spoken of may be considered in general as favorable to epidemics of Cholera, there are, nevertheless, certain facts showing that conditions, equally injurious apparently, have not had the same result. Many cases have been quoted where a town, or infected quarters, which seemed destined to become the prey of Cholera, have been specially spared. We note an instance of this kind observed last year at Constantinople: while Cholera was raging in the arsenal, there were in the *bagne*, situated within its precincts, 700 galley slaves, 500 of whom were sent out every day for employment on different works. Now, the *bagne* is, in point of fact, a perfect sink, where all the vilest hygienic conditions are massed together. During the height of the epidemic, the galley slaves were spared, and it was only when its violence diminished that one of three guards of the *bagne* was attacked. Soon after, 15 cases occurred among the 700 convicts, and only 7 resulted fatally. On the other hand, the soldiers and marines of the arsenal lost 1 in 9 from Cholera. Is it not very remarkable that, while the latter were placed in comparatively good hygienic conditions, they should show a mortality of 11 per cent. on their effective strength, as compared with a mortality of 1 per cent. among the convicts?

The Commission confines itself to noting these facts, which show that everything has not yet been said of the auxiliary causes of Cholera.

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tions from such a soil, which would give rise to combinations favoring the development of Cholera, need not necessarily be preceded by the impregnation of the soil in question by choleraic matter (*a*).

(*a*).—The Conference thinks it advisable to record here the complete exposition of this theory of M. Pettenkofer as brought forward by Dr Meehlig (Sitting of 28th June, Minute No. 21).

"... ... The researches of Pettenkofer do not relate to the quality of the soil considered as a receptacle of the choleraic principle; Pettenkofer established, what had already been advanced by others before him, that the quantity of the soil of a locality is the most powerful among the auxiliary causes of Cholera; only he goes a great deal further, in so far that he asserts that a soil possessed of the qualities he describes is so essential to the development of Cholera, that the choleraic germ, imported into a locality with a soil possessed of qualities quite different, would be perfectly innocuous.

"A soil favorable to the development of Cholera should, according to Pettenkofer, be easily permeable by water and air, and impregnated with organic matter (excrementitious matter especially) and show from time to time a change in the level of the water below its surface; now, the *instant* that the water below the surface sinks, or when, in consequence, a sort of comparative dryness succeeds to unusual humidity, that, according to him, would be the most favorable moment for the development of Cholera.

"Thus Pettenkofer concludes that two elements are indispensable to the development of Cholera: 1,—The importation of the choleraic germ into a locality; 2.—A peculiarly constituted soil. Neither of these two elements is sufficient in itself, the simultaneous action of both is necessary; people suffering from Cholera would furnish the germ, and the soil would furnish certain exhalations, the combination of both of which, whether in the atmosphere, or in the human frame, would result in choleraic infection ... ..."

In conclusion, *the Commission recognises that the hygienic and other conditions, which in general predispose a population to contract Cholera, and consequently favor the intensity of epidemics, are misery and want, with all their consequences—the crowded and sickly condition of individuals, hot weather, absence of ventilation, exhalations from a porous soil impregnated with organic matter, especially if such matter proceeds from choleraic dejections.*

Moreover, the Commission is of opinion that, as it appears to be demonstrated by experience that the dejections of Cholera patients contain the generating principle of Cholera, it is reasonable to hold that sinks, cesspools, latrines, and the contaminated water of a city may become the propagating agents of the disease.

The Commission adds that it seems to result from positive facts that the soil of a locality once impregnated with choleraic matter has been able to retain for a long time the property of evolving the principle of the disease and thus keep an epidemic alive, or even regenerate it after its extinction.—(Adopted unanimously, except by M. Pélikan.)

OF IMMUNITY WITH RESPECT TO CHOLERA.

XXVII.

How is immunity with respect to Cholera to be understood?

The Commission would not think it had properly accomplished its task, if, after having proved the transmissibility of Cholera and shown as far as possible, the conditions favoring its propagation, it did not take into consideration the resistance opposed to its development by certain countries, certain localities, and the greater number of people. It is to this resistance, which it may be said is very variable, that we give the name of immunity. By this is understood that the locality which has enjoyed the immunity has resisted the importation of Cholera, and that the person who has escaped has been exposed to the contagion of the disease, as for instance, a physician in the midst of an epidemic focus.

It is all the more desirable to take this immunity, into consideration, because it has often been wrongly brought forward against the transmissibility of Cholera, and because, on the other hand, it leads to very important considerations in regard to prophylactic measures.

Those medical men who thought that they saw in this immunity the proof that Cholera was not transmissible, forgot that the same immunity, the same resistance, more or less, is found in all diseases, without exception, reputed to be the most transmissible or contagious. It is found to exist with regard to the plague, the yellow fever, small-pox, scarlatina, &c. If it were otherwise, if all these diseases were transmitted by the mere fact of their being transmissible and the subjection of persons to their influence, the human species would long since have disappeared from off the face of the globe. Happily it

is not so, and a well balanced frame in the majority of cases opposes an efficacious resistance to all these diseases. The principle of all contagious diseases cannot be regenerated except under certain conditions, in the absence of which it dies away; in the same way that it is not enough merely to cast a grain on the soil haphazard to cause the reproduction of the plant from which it was taken: it is necessary that the soil should contain all the elements favorable to the germination of the seed. No doubt all morbific principles are not alike in requiring the same amount of favoring circumstances for their development, but the necessity of an organisation favorable to the regenerating evolution of a morbific principle is not the less a fundamental point in the doctrine of the transmission of diseases.

Let us proceed to facts relative to Cholera. It is a matter of remark that certain countries and certain localities have completely or partially resisted the importation of Cholera, and that this disease has reached them only to become extinct without spreading. Amongst the European countries which have enjoyed this immunity may be mentioned Alpine Switzerland, properly so called (excepting a certain number of cases in Aargau, Thurgau, and Ticino [Tessin] in 1855, which, besieged as it were by the disease, resisted its invasion. *(Marc d' Espine, Archives gén de Méd.* 1857.*)* The same result took place with regard to a certain number of groups of mountains. We are acquainted with the interesting researches of M. Fourcault in 1849, and those of M. M. Boubée and Vial, in 1853, on the influence of certain geological conditions with regard to Cholera, and notably on the repulsive influence of a granitic soil, whence the conclusion was drawn that a granitic soil is an obstacle to the development of Cholera. This conclusion expresses a general, though at the same time far from an unexceptional, fact. The same may be said with regard to heights: Cholera has been observed at considerable elevations; but it is a fact, nevertheless, that, in a country ravaged by Cholera, the highlands have suffered much less than the plains. Dr. Polak has communicated to the Commission the interesting fact that when Cholera rages at Teheran (3,500 English feet above the level of the sea), the disease spreads to the villages not far from it, on the slopes of the Elburz, at an altitude of 6,000 feet, where it only shows itself in isolated cases; but it goes no higher. During the progress of three epidemics by which these villages were attacked, the Shah of Persia having moved his camp, consisting of 10,000 persons, to the valley, at an altitude of 7,500 feet, at the foot of the volcanic peak of Demawend, the camp altogether escaped contagion in spite of incessant communications with the infected villages.

But let us proceed to more important facts in connexion with towns which have hitherto resisted, more or less, the influence of cholera.

These towns are numerous in Europe, but the one which most of all others deserves mention, in this respect, is Lyons. This town consisting of 400,000 souls, seems at first sight to contain all the conditions propitious to an epidemic of Cholera. Situate at the confluence of two rivers, if, on the one side, it is built on an alpine soil, on the other it rests on alluvial ground; it contains a considerable number of workmen;

causes of insalubrity and wretchedness are not absent; and moreover, it is situated on the great way of communication which traverses France, from south to north, and it has served as an asylum for a great number of fugitives from places infected by Cholera. And yet notwithstanding all this, Lyons has, so to say hitherto resisted the choleraic influence. It entirely escaped the first epidimic which, in 1832, ravaged the north of France, and again that which went up the Rhône in 1835. Later still, during the epidemic of 1849, a barrack was invaded and some cases were seen in the neighbourhood around, but the disease entirely disappeared in the course of three weeks. In the autumn of 1853, while the disease was ravaging the department of the Drôme, it appeared at Lyons, seizing upon 400 people, and causing 196 deaths: there it ceased. Lastly, in the year 1865, Cholera was not known in the town, so far as we are aware, except, perhaps, in the shape of a few isolated cases from other places. It cannot be said that Lyons escaped because there were no choleraic arrivals in the town; on the contrary, such arrivals took place in plenty; the disease was imported and sometimes developed just sufficiently to prove the resistance of the indigenous population, or, of the locality, to its propagation.

Do these and many other analogous facts prove that Cholera is not transmissible? Not the least in the world. They prove simply that there are localities, like individuals, which enjoy a sort of immunity against the transmission, an immunity which, so far as the localities are concerned, may be complete or partial, permanent or temporary. We say temporary, because there are instances showing that a locality which has resisted the disease at one time has been invaded by it at another, and *vice versâ*. These local immunities, moreover, are not special to Cholera, but also exist in regard to the plague and the yellow fever.

As for the reason of complete or almost complete immunity when, as at Lyons, we find it exist under conditions which might be believed favorable to the development of Cholera, we cannot arrive at it.

It is simply an important fact to record and one worthy of serious study.

It is not so with regard to the comparative and more or less pronounced immunity which certain countries have always enjoyed, or have begun to enjoy within a few years past: this immunity, as a general rule, when closely looked at, may be attributed to the good hygienic conditions existing in these localities, or to special improvements which have been lately effected. This comparative immunity is a sufficient reply to those who are too much inclined to look exclusively to measures of quarantine for the safety of populations from Cholera; it proves, not that such measures are useless, far from that—but that hygienic measures are their essential complement.

The fact of the immunity of individuals in the midst of a choleraic focus is not less worthy of attention than the immunity of localities.

It has been seen, by what has been said before, that when Cholera breaks out in a concentrated mass of men, it carries off a limited number of victims, a number which varies according to the circumstances we have mentioned in detail, but which, even under the very worst conditions, has never exceeded, 20 per cent. of the multitude. It may even be said that an epidemic of Cholera, where the number of attacks, properly so-called, amounts to 5 per cent. of the population, is very grave. Even this proportion was not attained last year at Constantinople.

The resistance to the choleraic poison offered by the human frame in the midst of a focus of cholera is complete in some persons, that is, their organisation experiences no sort of appreciable disturbance. In the greater number of cases the poison shows itself by a derangement in health, varying from a simple epigastric uneasiness, accompanied with flatulence and vertigo, to cholerine; but in the immese majority of instances the organisation offers resistance, and no attack of Cholera, properly so called, results. Lastly, in a comparatively restricted, but very variable, number, the organisation succumbs and Cholera declares itself. These last cases denote the degree of gravity of the epidemic. This is what observation shows.

Complete immunity, therefore, against choleraic influences is not the rule, and moreover, whether comple or not, it may be only temporary, *i. e.*, a man who has enjoyed complete immunity during the course of one epidemic may succumb to the next, and an individual who has resisted the disease for a certain period of the epidemic may end by being attacked by it. This has often been observed in medical men, who, overexcited by the sentiment of duty, resist the disease during its height, but sometimes succumb during the decline of the epidemic when exhausted by fatigue.

Immunity against Cholera, therefore, is in definite proportion to, and as variable, as the vital resistance of individuals. And this is the reason why, in the matter of immunity, the past never is a guarantee for the future.

To this result of observation it has been objected that, during epidemics of Cholera, it is not rare to see very vigorous individuals stricken down by the side of persons, apparently feeble, who escape unscathed; but medical men know well that the vital resistance is no way proportionate to muscular energy, and that a nervous, though apparently lean and feeble man, may resist morbific influences much better than a colosus who is, after all, only an ill-balanced phenomenon.

In addition to the more or less complete immunity appertaining to individuals, there is also the temporary immunity left behind it by a recent epidemic. The rapid extinction of Cholera in masses of men can only be explained, as has been seen above, by this sort of acquired immunity; and this immunity is the reason why—until after a certain interval of time (the duration of which however cannot as yet be defined) —a serious epidemic of Cholera cannot burst out afresh, notwithstand-

ing fresh importations of the disease in a locality which has just been ravaged by it. This, it must be distinctly understood, is not applicable to places of pilgrimage where *renewed* masses of men assemble periodically.

If, as we have just seen, the immunity against Cholera is proportionate to the vital resistance, and if what we have said of the auxiliary causes of the disease is referred to, it will be found that these causes are just of the same nature as those which diminish the vitality of individuals as well as of an entire population, and the conlusion will be arrived at that immunity from Cholera results from all the conditions contrary to these auxiliar causes, that is, from good hygienic conditions; that the influence of these last is such, that if we could succeed in generalising these good conditions, and thus reduce Cholera to the proportions it attains among classes, and even populations, in easy circumstances it would become a disease of but small importance in its results.

The Commissioner recognises, then, that in opposition to the transmissibility of Cholera, there exists in healthy men, a resistance capable of neutralising the influence of the poisoning agent, and that this, resistance, weakened among poor and wretched populations and in individuals suffering from exhaustion arising from any cause whatever, may, by the progress of material prosperity and by good hygienic measures, become so generalised as to render Cholera a disease not to be feared. But unhappily we are far from having arrived at this stage yet, and, therefore, measures of isolation are and will long remain necessary.

It must be properly understood that Cholera, although transmissible, does not fatally attack individuals under its influence; that a well regulated life and good hygienic conditions are almost certain guarantees against its action; that it rages preferentially in unhealthy spots, amongst populations bowed down by want and wretchedness, and amongst individuals whose constitutions have already been undermined by disease or excesses.

The Commission, therefore, while asserting the transmissibility of Cholera as an incontestible fact, thinks it necessary to add the proviso fixing limits to the transmission.

It is more dangerous, in the opinion of the Commission, to conceal any part of the truth on this head than to speak it out plainly in its entirety.

In conclusion, *the immunity enjoyed by certain localities, i. e., the resistance, permanent or temporary, general or partial, opposed by these localities to the development of Cholera within their limits, is a fact which does not exclude the transmissibility, but which shows that certain local conditions, not yet quite defined, are an obstacle to the development of the disease.*

Also, the more or less complete and more or less durable immunity enjoyed by the greater number of persons in the midst of a choleraic focus, an immunity which proves the individual resistance to the poisoning principle, is a circumstance which must be considered as most important.

Regarded in connexion with the development of an epidemic, it is the corrective of the transmissibility, and, in a prophylactic point of view, it affords means for the restriction of the ravages of the disease.

(Adopted unanimously, with the exception of MM. Monlau and Pélikan, who abstained from voting).

Deductions regarding the attributes of the generating principle of Cholera.

The Commission does not mean to occupy itself with the numerous hypotheses enunciated on the nature of the cause by which Cholera is produced; it merely wishes to evolve, as corollaries of facts shown in the course of its labors, certain attributes of the generating principle of the disease, the knowledge of which may conduce to the application of prophylactic measures.

XXVIII.

Can any thing precise be deduced from the facts already brought forward in connexion with the origin, propagation, and transmissibility of Cholera, with regard to the generating principle of the disease, (or at any rate the media which serve as its vehicle or receptacle,) to the conditions of its penetration into the organisation, to the manner in which the organisation escapes it, and to the duration of its morbific activity; in short, with regard to all its attributes the knowledge of which is important in a prophylactic point of view?

Whether the generating principle of Cholera be styled contagion, germ, or miasma; whether it be supposed to consist of an organic substance or not, it is clear that it has evaded all investigation; that it has never yet been found possible to analyse it; and that it is only known to us by its effects. In this point of view it does not differ from other morbific principles.

What we know is that it regenerates itself in man by the fact of the morbid evolution to which it gives rise.

In our countries it has never been seen to originate otherwise; it is by successive regenerations in man that it multiplies and propagates itself; it has never been originated by the nature of the soil or the worst hygienic conditions. But in regard to its origin in India, where Cholera is endemic, is this the case also? Is the morbific principle spontaneously developed there, without the aid of the human frame, as a result of conditions as yet unknown and which do not exist anywhere else? Or, applying the theory of M. Pettenkofer, is the soil alone of those places in which the disease is endemic the receptacle of its germ, and has it the property of preserving it so long as to permit of its being incessantly evolved more or less actively, without this constant evolution tending to exhaust it before it can be renewed? What we have said of the obstinacy of Cholera in some parts of Europe would in a manner support this hypothesis. The Commission merely brings to notice these important problems which it is not in a position to solve.

Be this as it may, the principle of Cholera, that Cholera which has invaded the world, seems to have originated in the valley of the Ganges, and it is chiefly there that, on a low and damp alluvial soil, it maintains itself endemically at the present day. From this fact, and from a certain analogy in the symptoms, are we authorized to infer that Cholera has a miasmatic origin, and is only a sort of malarious disease produced by the marshes of the Ganges? The Commission does not think so. It is in fact proved by observation that, on the banks of the Ganges, there is no proportion between the intensity of a malarious and of a Choleraic epidemic; each has its own peculiar features, and reaches the climax of its intensity at a different season of the year. There is, moreover, a fundamental characteristic distinguishing Cholera from malarious affections: the latter only rage on the spot, and the principle by which they are produced does not re-develop itself in man, and, consequently, is not capable of being transmitted.

To sum up:—*In the present state of science, we can only pronounce hypothetically on the nature of the generating principle of Cholera; we only know that it originates in certain parts of India, where it permanently maintains itself; that the principle is regenerated in man, and accompanies him in all his peregrinations; that it may thus be spread far and wide, from country to country, by successive regenerations, never producing itself spontaneously except in the human frame.*—(Adopted unanimously, with the exception of Dr. Goodeve, who abstained from voting.)

XXIX.

What are the vehicles of the generating principle of Cholera?

By the word vehicles, the Commission means merely the agents by means of which the morbific principle penetrates the organisation. To this question facts reply that the atmosphere is the principal vehicle of the choleraic principle. The rapid dissemination of the disease in an infected locality, the simultaneous occurrence of a great number of attacks in a given assemblage when there was no possibility of direct or indirect contact with those first striken down, the general influence which, during the progress of an epidemic, weighs more or less heavily on individuals placed within the limits of a choleraic fous, these circumstances, joined to facts showing that persons have been attacked by Cholera at some distance from a focus of the disease with which they had had no communication, prove, in point of fact, that the atmosphere is the principal vehicle of Cholera. The choleraic principle then is volatile, and would act, in this point of view, like miasmatic exhalations, by infecting the atmosphere.

But does it follow that because the air is the vehicle for the choleraic principle, that this principle can be carried to a distance by the air? To this question facts give a reply in the negative. They show that the action of the choleraic miasma is much surer in its effects if produced in a confined atmosphere and in proximity to a focus of emission, whether this focus be a choleraic patient, or his dejections, or an article contaminated by them. A writer of great authority (Griesinger) maintains that the probability of action on the part of the choleraic germ diffused in the

atmosphere diminishes in direct proportion to the square of the distance from the point of emission, *i. e.*, its action will be ten thousand times surer at a distance of one foot than at 100 feet. It appears then that the miasma of Cholera is like typhoid miasma, inasmuch as its activity is rapidly exhaused in a free current of air at some distance from its focus.

XXX.

To what distance from a focus of emission can the principle of Cholera be carried by the atmosphere?

Here we have a question of the greatest practical importance: To what distance from a focus of emission can the atmosphere carry the principle of Cholera? The general rule, based upon observation, shows that Cholera is scarcely ever carried beyond a very short distance by the agency of the open air (let us say 100 *metres* [109·3633 yards] as an approximate idea of what we mean); and that in the immense majority of instances the transmission is not carried out so far as this. But are there facts tending to make us admit that it may be carried out a great deal further from the focus of emission?

Those instances in which Cholera has spread from a lazaretto to the neighbourhood would be of great service in the solution of this question, if every one of these cases was not susceptible of a much more probable interpretation than that of atmospheric transport. It has been seen, from what we have said of the Turkish lazarettos, that the atmosphere cannot be accused of having carried the disease to them, when a town close by one of them was tainted with the disease; the conveyance of the disease was effected either by contravention of rules, or insufficiency of preventive measures.

Last year, at Malta, the first case of Cholera in the town (Valetta) broke out at a point 662 feet distant from the lazaretto, without there having been any certainty of intercommunication; but it must be added that, before that, numerous vessels from Alexandria had been admitted to Malta in pratique. At Ancona, Cholera showed itself in the town after the arrival of a ship from Alexandria, from which a Cholera patient had been landed at the lazaretto; but there is good reason to believe that it was not the wind passing over the lazaretto which communicated the infection to the town. It was the same with regard to Spain: the propagation of Cholera in that country in 1865 was not the result of its transport by the air from the lazarettos in which it was confined.

Lazarettos then do not afford us any example which may be accepted in support of the transport of the choleraic principle to a certain distance. It is not the less true, however, that the proximity of a lazaretto is dangerous to a healthy locality.

A fact has been quoted as having occurred at Sunderland in 1848, when the disease was transmitted to the distance of a mile; and again in Ireland, where the transmission seems to have been effected in the same direction as a violent wind.

But we would have more distinctive facts in ships coming from healthy countries and attacked by Cholera at sea, at a certain distance from an infected place and previous to any communication with it. Two facts of this nature have been brought foward before the Commission: one relative to two vessels of the French Black Sea squadron, each of which had a case of Cholera on board in sight of land and before arriving at Baltchick. This case was detailed before. It will be admitted that too many important details are absent to permit of much value being attached to it. The other is even still less circumstantial: it relates to an English fleet, which had some cases of Chalera on board in sight of Malta where the disease was raging. But where did the fleet come from? and was there an epidemic on board? We do not know. All these examples are fruitful of doubt.

Taking known facts into consideration, the Commission has arrived at the following conclusion:—

The atmosphere is the principal vehicle and generating agent of Cholera; but the transmission of the disease by the atmosphere remains, in the immense majority of instances, limited to a very short distance from the focus of emission. As for the facts brought forward to prove the transport of the disease by the atmosphere to a distance of one or more miles, they are not sufficiently conclusive.

(Adopted unanimously, with the exception of Dr. Goodeve, who abstained from voting.)

XXXI.

Independently of the atmosphere, what are the other vehicles of the Choleraic principle?

The atmosphere is not the only vehicle for the conveyance of the choleraic principle. Facts observed in England seem to place it beyond doubt that *water*—either soiled, as we have said, by matter proceeding from choleraic dejections, or contaminated by the morbific agent diffused in the atmosphere—may be the means of introducing this agent into the human system. We need not return to facts in support of this opinion.

It is reasonable to admit, in the same way, although supporting evidence cannot be brought forward, that certain alimentary substances may become the vehicles of the same morbific principle.

Thus according to the Commission, *water and certain ingesta may also serve as vehicles for the introduction of the generating principle of Cholera into the human organism.*

This being so, it follows necessarily, it may be said, that *the passages by which the poisoning agent penetrates the system are principally the respiratory and very probably the digestive organs also. As for penetration through the skin, nothing tends to prove it.*—(Adopted unanimously.)

XXXII.

What are the principal receptacles of the Choleraic principle ?

The principle of Cholera, we have said, regenerates itself in man by the fact of the morbid evolution to which it gives rise; but by what passages does it escape and what are the media, the matters which serve it as receptacles? Here again the question is answered by very positive facts. It is in the alimentary canal that the morbific agent appears to be created. But whether this is so or not, it is certain that the matter issuing from the alimentary canal of a Cholera patient contains the morbific agent. The observations of which we have spoken, and which prove this, are so numerous and distinctive that there is no longer room for doubt on the subject. This being so, it would appear, according to the researches of Pettenkofer and Theirsch, that in the fresh dejections of Cholera patients the morbific agent is merely latent, and that a certain degree of fermentation is necessary for the develpoment of poisoning activity and the evolution of the morbific principle. This no doubt is only a theory, but a theory in accordance with facts, and moreover so fertile in practical deductions that it must be very seriously considered.

According to this theory, then, the generating principle of Cholera is, in point of fact, the result of the fermentation of matter voided by Cholera patients: so that every thing that tends to prevent the fermentation of this matter, without destroying it, tends also to preserve the germ of Cholera intact, which germ will develop itself afterwards if circumstances concur to favor fermentation; and so that, too, the principle of Cholera, being the volatile product of fermentation, can, as such, have only an ephemeral activity. And this is, in fact, what observation has proved.

Whatever may be the worth of this doctrine, it is incontestable that the dejections of Cholera patients are the primary receptacles of the morbific principle, and that, after them, linen, clothes, everything indeed that can be soiled by these dejections, and, *à fortiori*, cesspools, sinks, latrinæ, water, porous soil, may become the secondary receptacles of the morbific principle, whence it evolves itself sooner or later, more or less energetically, according to circumstances. Hence the necessity of taking all these elements into consideration in connexion with prophylactic measures.

But is there no reason to suppose that the principle of Cholera evolves itself from the organism by other passages than the alimentary canals, by pulmonary exhalation, for instance? All that we can say in answer to this question is that the fact has not been demonstrated, and that, moreover, the morbid phenomena which characterise Cholera would scarcely make it probable.

In conclusion, the *matter of choleraic dejections being incontestably the principal receptacle of the morbific agent, it follows that every thing contaminated by such dejections also becomes a receptacle whence the generating principle of Cholera is evolved under the influence of favorable conditions; it also follows that the choleraic germ very probably has its origin in the digestive canals, to the exclusion, perhaps, of every other part of the organism.*—(Adopted unanimously.)

XXXIII.

What is the duration of the morbific activity of the generating principle of Cholera?

This question should be regarded from two different points of view, both of which are of practical importance:—

In the first place, how long does the morbific agent retain its activity after expulsion from the organism? or, in other words, does it retain the property of retaining the disease? This serious question is in great part solved by facts. They show that the choleraic principle is in general of only ephemeral activity: that it is rapidly destroyed on exposure to the open air, so completely so, that if it is not reproduced and maintained by successive regenerations, or if it is not kept up in a latent state under peculiar and very rare circumstances, the locality where an epidemic has burst forth very soon loses the property of giving birth to the disease again. This is, in fact, what is proved by the study of epidemics of Cholera considered in the most limited condition possible. We have seen that then, in a given assemblage, the rapidity of the development of the epidemic is proportionate to the concentration of the mass, and that, if this mass does not receive fresh additions, the disease definitely ceases, until a fresh importation takes place. In this case, the cessation of the epidemic can only be explained by the combination of two circumstances: on the one hand, the natural or acquired immunity of the mass of survivors, which prevents the regeneration of the morbific principle; and, on the other hand, the more or less rapid extinction of the principle itself directly it is not renewed. Now, experience shows that, as a general rule, under ordinary circumstances, a locality which has just been devastated by Cholera loses the property of transmitting the disease to the new arrivals very soon after the complete extinction of the epidemic. The epidemic does not cease because the existing morbific principle loses its malignity, the proof being that if (as we have seen) there are new arrivals, as yet quite free from choleraic influences, in a place where the disease is on the point of becoming extinct, the choleraic influence will produce effects on them as terrible as if the disease were only commencing its ravages, and that if individuals leave this same place for healthy localities the disease which they spread loses nothing in intensity. The cessation of an epidemic, therefore, is not owing to the loss by the existing morbific principle of its malignity, but to the acquired immunity of the population amongst whom it has been raging, combined with the rapid extinction of the principle itself.

We say that such is the general rule; but we hasten to allow that there are important exceptions. Positive facts prove that, even in our countries, certain localities have been able to maintain Cholera for a number of years, while this maintenance cannot be entirely explained by the renewal of the population. It appears that in those places peculiar conditions, either in the soil or in habits, contributed to prevent the rapid destruction of the morbific principle; whence arise the kind of efflorescences which have been seen in certain parts of Europe after great

epidemics. It should be noticed here that the study of the circumstances under which such exceptions occur may lead to the knowledge of the causes of endemic Cholera.

But the most interesting exceptional facts to be noticed, in our point of view, are those which show us the retention for a long time of the property of transmitting Cholera by the linen and baggage of a Cholera patient kept from contact with the open air. These facts prove that, under certain conditions of confinement, the Choleraic principle may retain, for several months perhaps, in a latent state, a sort of vitality, which displays itself on contact with the open air. But if the fact is incontestable, the instances in proof of it are so rare, that they do not permit us to deduce any thing precise as to the length of time during which the morbific activity continues in a state of confinement.

Thus, according to the Commission, *it follows from the study of facts that the generating principle of Cholera rapidly loses its morbific activity in the open air, and that such is the rule; but that, under certain peculiar conditions of confinement, this activity may be retained for an indefinite time.*—(Adopted unanimously.)

Lastly, it remains to be known in what space of time the morbific principle may be reproduced and eliminated by a diseased organism, or, in other words, in what time an individual suffering from premonitory diarrhœa, or confirmed Cholera, may transmit the disease. This question, with which is connected that of the duration of the period of isolation, is very difficult of solution, and has been warmly discussed by the Commission. The discussion hinged principally upon the possible duration of the (so-called) premonitory diarrhœa, which, judging by experience, must have, like confirmed Cholera, the property of transmitting the disease.

The opinion that this contagious diarrhœa might, in certain cases, be prolonged for several weeks was maintained with great warmth, being supported by great authority and particularly by that of Griesinger. Cases were quoted of individuals, who had been suffering from diarrhœa for several weeks, transmitting Cholera, and finally succumbing to it themselves. Now, as it is impossible during the progress of an epidemic, to distinguish properly cases of this kind from those into which Cholera does not enter at all, it follows, it has been concluded, that all these cases of prolonged diarrhœa should be regarded as suspicious.

To this the reply has been given that it is a matter of observation that premonitory diarrhœa, so called, scarcely ever lasts for more than three days, and, if prolonged beyond that time, very rarely exceeds a week; that nothing shows that the instances adduced were not cases of diarrhœa altogether distinct from Cholera and during the course of which the latter might have intervened, as has often been seen during the course of an epidemic; that it is the same with the disease as with its incubation that the immense majority of cases prove that both are of very brief duration in Cholera; and that, consequently, it may safely be held that a person has not got Cholera if he has been isolated from all danger of contagion, and if his diarrhœa is prolonged for more than eight days after he has been placed in isolation without showing any distinctive mark of the disease.

Finally, the Commission adopts the following conclusion: *Observation shows that the duration of so-called premonitory choleraic diarrhœa—which must not be confounded with the various diarrhœas that exist while Cholera is raging—does not exceed some days.*

The facts quoted as exceptional do not prove that those cases of diarrhœa which last longer are choleraic and are capable of transmitting the disease, when the person attacked has been kept safe from every source of contamination.—(Adopted by a majority of 14 votes against 4. MM. Gomes, Millingen, Mühlig, and Salvatori in the minority. M. Monlau abstained from voting.)

Here terminate the labors of the Commission on the origin, endemicity, transmissibility and propagation of Cholera, the historic review of the march of the epidemic in 1865, drawn up by a Sub-Committee, the Reporter to which is Dr. Bartoletti, having to be separately presented to the Conference.

In replying, as it has just done, to the various questions of the programme, *i. e.*, in confining itself to deduce from facts the reasonable conclusions to be inferred from them, the Commission thinks it has established such sure bases as to permit the Conference to give its opinion on the question of prophylactic measures with good and sufficient knowledge and reason.

A. FAUVEL,

Reporter General.

The present Report, after having been discused and adopted chapter by chapter, has been approved as a whole by all the Members of the Commission.

Members of the Commission :

Bartoletti.	*Count* A. de Lallemand.	J. E. Polak.
A. Bykow.	E. Lenz.	Salem Bey.
F. Bosi.	A. Maccas.	S. Salvatori.
E. D. Dickson.	J. Millingen.	Sawas.
A. Fauvel.	P. F. Monlau.	A. M. Segovia.
E. Goodeve.	Muhlig.	A. Sotto.
B. A. Gomes.	*Count* de Noidans.	I. Spadaro.
Baron de Hubsch.	E. Pelikan.	I. Van-Geuns.

Constantinople, 12th May 1865.

The above Report has been discussed and adopted by the Conference (text and conclusions) with the few modifications and additions shown in notes in the present reprint, 3rd August 1866. *(See the Minutes of the Conference from 9th June to 2nd July).*

No. 112, dated 17th December 1866.

From—The Secretary of State for India,

To—The Government of India.

List of correspondence annexed.

In continuation of correspondence which has already been forwarded to you relative to the Proceedings of the International Cholera Conference at Constantinople, I now forward for your information a copy of further letters, with their enclosures, which have been received from the Foreign Office on the subject, together with the answers which have been returned to those communications.

2. You will observe that in the Report of the Committee of the Conference on the "Mesures à prendre en Orient pour prevenir de Nouvelles Invasions du Cholera en Europe," which forms one of the latest printed documents in the series, various measures are suggested for adoption by the Governments in India, with a view both to the extinction, or at least to the restriction of range, of cholera in India itself, and to the prevention of the spread of cholera from India to the countries to the westward.

3. The special measures suggested by the Commission for limiting the ravages of cholera in India consist, in addition to the operations of the Sanitary Commissions at the different Presidencies, of the maintenance and extension of the steps taken by the Governments of Madras and Bombay for the regulation of the periodical pilgrimages to the several places held sacred by the Hindoos; while for preventing the spread of cholera from the shores of India to Europe and the intermediate countries, the Commission recommend a system of passports on the principle in force in the Dutch possessions in the Eastern Seas, and the extension and increased stringency of the Native Passengers' Act of 1858.

4. Her Majesty's Government are fully aware that the objects, which the Cholera Conference has in view have not been neglected by your Government, or by the Governments of the several Presidencies, and they do not doubt that the various measures now in operation will have a sensible effect in producing a permanent improvement in the state of the public health in India, and in limiting the amount of disease which was engendered on board the pilgrim ships for Arabia before those ships were subjected to regulation.

5. Her Majesty's Government are desirous, however, that the subject should receive further and careful consideration, with special reference to the proceedings of the Conference and to the recommendations made by it with regard to India, and I have accordingly to request that, in communication with the several local Governments, you will carefully consider what further measures it may be practicable to adopt for the purpose at once of improving the sanitary condition of the people in India, and of promoting the special objects for which the Cholera Conference was instituted.

6. The conclusions at which you may arrive should be reported for the information of Her Majesty's Government, and I request that I may at the same time be furnished with any remarks which you may have to offer on the various other points which have formed the subjects of discussion between this Department and the Foreign office in relation to the proceedings of the Conference.

List of Correspondence referred to in the foregoing Despatch.

INDIAN PILGRIM TO MECCA.

Letter—

From	Foreign	Office,	9th	March	1866,	7	enclosures.
„	„		10th	„	„		
„	„		12th	„	„	4	„
„	„		13th	„	„	4	„
To	„		15th	„	„		
From	„		16th	„	„	1	„
„	„		21st	„	„	4	„
„	„		24th	„	„	2	„
To	„		6th	April	„		
„	„		26th	March	„		
From	„		23rd	April	„	1	„
„	„		28th	„	„	2	„
To	„		30th	„	„		
From	„		3rd	Dec.	„	1	„
To	„		14th	„	„		

Proceedings of the Conference at Constantinople.

Letter—

From	Foreign	Office,	24th	March	1866,	9	enclosures.
„	„		27th	„	„	2	„
„	„		23rd	April	„	1	„
„	„		11th	June	„	1	„
„	„		16th	„	„	5	„
„	„		30th	„	„	4	„
„	„		21st	July	„	1	„
„	„		28th	„	„	6	„
„	„		7th	Sept.	„	3	„
„	„		22nd	„	„	6	„
„	„		12th	Oct.	„	1	„
„	„		18th	„	„	3	„
To	„		9th	Nov.	„		
From	„		20th	Oct.	„	6	„
„	„		17th	Nov.	„	3	„
„	„		3rd	Dec.	„	3	„

Dated 9th March, 1866.

From—J. MURRAY, Esq.,

To—*The Under Secy. of State for India.*

I am directed by the Earl of Clarendon to transmit to you, for the information of the Secretary of State for India, the accompanying papers as noted in the margin, relative to the course adopted by the Cholera Commission at Constantinople in order to prevent the spread of cholera by Indian pilgrims, and I am to request that these papers may be returned to this Office after perusal.

From British Cholera Commissioners, Nos. 3 and 4.
To Mr. Stuart, No. 4, Feb. 28th.
To Mr. Stuart and Dr. Goodeve, March 8th.
Tel., March 2nd, March 4th.

No. 3, dated 16th February, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—*The* EARL OF CLARENDON, K. G., *&c. &c.*

We have the honor to enclose herewith two printed copies of the proposal of the French delegates, requesting the Conference to devise immediate provisional measures to arrest the progress of cholera on the shores of the Red Sea, in the event of that malady breaking out amongst the pilgrims who have gone this year to Mecca.

The Committee appointed by the Conference to examine the French proposal is composed of—

Mr. Stuart, President.
Dr. Bartoletti (Turkey), Secretaire-Rapporteur.
Mr. Vetsera (Austria).
Dr. Fauvel (France).
Dr. Bosi (Italy).
Dr. Sawas (Persia).
Dr. Lenz (Russia).

When it met yesterday, Mr. Stuart thought it right to object to the proposal, principally upon the grounds of its being beyond the province of the Conference; and rather that of the Council of Health, or of the Sublime Porte, to take such measures as might appear desirable with respect to the present pilgrimage; that the invitation of the French Government to the other powers defined the objects of the Conference to be, in the first place, the investigation of the causes of cholera, and, subsequently, the suggestion of measures for arresting it; that the proposal took much for granted which it was the duty of the Conference to investigate; that before suggesting measures, even provisionally, which might be the cause of serious hardships and inconvenience to pilgrims and materially interfere with commerce, we ought to be thoroughly convinced of

the necessity of such measures; and that we (the British Commissioners) were not authorized to agree to a proposal of that nature without referring to Her Majesty's Government for instructions.

As all the other members of the Committee were of opinion that the proposal came within their competence, Mr. Stuart could only repeat his objections, and reserve his right to submit the result of the deliberations of the Conference upon the question to Her Majesty's Government, before becoming a party to it.

There is to be another meeting of the Committee to-morrow, at which the details of the proposal will be examined; and there can be little doubt from the general feeling upon the subject, that the measures suggested will be adopted by the Conference, after undergoing perhaps some few modifications. There is so far no question of any unusual interference with vessels coming to Suez from beyond the Red Sea; but it is not impossible that some alterations may be proposed with a view to render the measures applicable to such vessels.

The report of the Committee will be presented to the Conference on Thursday next, the 22nd instant and every effort will be made by the French Commissioners to procure its immediate adoption. We should therefore be obliged to your Lordship if you will inform us by telegraph what course you would wish us to pursue in the matter.

Your Lordship will observe that the measures are intended to be exclusively applied to the present pilgrimage, and not at all unless the cholera should unfortunately break out amongst the pilgrims.

The Committee appointed to report upon a plan for carrying out the work of the Conference consists of nine members—

Salih Effendi (Turkey), President.
Count de Lallemand (France), Vice-President.
Dr. Mühlig (Prussia), Secretaire-Rapporteur.
Malkom Khan (Persia).
Mr. Vernoni (Italy).
Dr. Pelikan (Russia).
Dr. Sotto (Austria).
Dr. E. Goodeve.
Dr. Monlau (Spain).

At the first meeting of this Committee, it was maintained by a great majority that it would be desirable at once to consider measures of protection against cholera, based upon its transmissibility; and that, if necessary, reasons might be given for these in an Appendix. Dr. E. Goodeve maintained that, whatever might be the opinions of the members of the Conference themselves, it was absolutely necessary, for the sake of those beyond its circle, to collect and record prominently full evidence of the manner in which cholera has spread into Europe in the last epidemic, before deciding upon measures of precaution based upon particular views.

We concur with him in this.

The meeting separated without coming to any decision; but at a sitting held yesterday, propositions were made by Count Lallemand which embrace the objects contended for by us; and on the question of the origin and cause of cholera generally, go even beyond what we think absolutely necessary. The feeling of the members seemed in favor of adopting these propositions.

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO MINUTE No. 1.

Proposition regarding the measures to be adopted in the event of cholera breaking out this year among the pilgrims at Mecca, put forward by the French delegates.

GENTLEMEN,—Among the numerous questions which demand the attention of the Conference, there is one distinguished from all others by its peculiar claim of urgency, and which, therefore, should have our consideration before the others.

We mean the measures to be adopted in the event of cholera breaking out this year among the pilgrims in Mecca.

We cherish the hope that this contingency will not occur; but there is no guarantee, after all, that it will not, and it is our duty, in order to respond worthily to the confidence reposed in us by our respective Governments, to be forearmed against this danger.

What a misfortune indeed it would be, gentlemen, if, while we were gravely discussing the origin and the means of preventing the importation of cholera, the disease were to make a fresh irruption in the wake of the pilgrims.

It is, therefore, a measure of precaution with a view to a proximate peril that we are about to submit for your urgent consideration.

We must not forget that the pilgrims are already on their way to the holy places, and that the period of their return is not remote.

Thus much said, let us proceed to the question itself. Let us look at it as it presents itself this year, that is to say, when the pilgrimage is in course of completion, and the hadjis are on the point of returning.

Let us now suppose that cholera exists among them: In what would the danger consist, and what should be done to avert it?

The danger would consist, as you are aware, in the probablity of the importation of the disease into Egypt by the pilgrims returning *by sea*, crowded on board steamers, and landed in thousands, in a very short space of time, on the Egyptian coast.

This is the new danger which was revealed to us in all its gravity by the events of last year. The peril was much less formerly when the pilgrims travelled in caravans, or had no other sea-going conveyances than frail barques which, coasted along, and made very long voyages.

As for importation by pilgrims returning by land, there is little fear of it. Experience, in fact, has proved that a long march by stages through the desert, was against cholera, the best of all quarantines applicable to a multitude.

Last year, the caravans which left Mecca a prey to cholera reached Damascus and Suez perfectly free from the disease. During the last eighteen years that I have devoted myself to this question, no fact, to my knowledge, has contradicted this innoxiousness.

Thus, the danger against which it is necessary to be fore-armed exists almost solely in the return *by sea*.

What is to be done then ?

Should a quarantine be imposed upon the pilgrims on their arrival at Suez or any other Egyptian port ? Yes, if we had to deal with only a few hundreds of travellers in ordinary conditions ; and again, when we come to discuss the question of the lazarettos applicable to cholera we shall see how full of difficulties this queston is ; but to desire to subject to serious measures of quarantine on their arrival thousands of pilgrims, carrying cholera with them and disembarking almost simultaneously on Egyptian soil, would be an unreasonable pretension. To our thinking, such a quarantine would be a deceptive mockery, and not such a guarantee as should be expected from the Conference.

Should an attempt be made, in order to diminish the number of simultaneous arrivals on Egypt, to regulate the embarkation at Jeddah in a suitable manner, to make a selection, to fix the numbers embarked, &c. ?

This order of precautions, however, would necessitate, for their practical execution, a considerable armed force at the port of embarkation. Represent this multitude to yourselves a prey to cholera, terror-stricken and wishing for flight at any price, and judge if measures of the kind in question would not infallibly lead to sanguinary collisions.

Last year, outward-bound vessels were in a manner taken by assault by the fugitives. It may be asserted that it will be the same again this year under analogous circumstances ; and if the forcible seizure of the ships were prevented by a naval force, you can easily imagine what would happen on land where everybody would endeavor to be among the number of those leaving. We think then that measures of this kind cannot be depended upon for this year at any rate. We add that, in any case, they would only be a means of diminishing, and not at all of suppressing the danger.

It has also been thought possible, in the event of the appearance of cholera, to land the pilgrims already embarked on some point of the coast half-way between Hedjaz and Egypt, at Tor, for instance, at the foot of Mount Sinai, and to subject them there to a suitable quarantine. This idea ought no doubt to be taken into consideration with reference to the future, though it is not devoid of serious inconveniences ; but you easily perceive that such an establishment cannot be improvised in a few days, and that the measure would be impracticable this year.

What then remains to be done? There remains only, we think, to put in practice the simplest, the promptest, the most easily executed and the surest measure, one which is attended with the fewest disadvantages in every respect: which is, *in the event of cholera breaking out amongst the pilgrims, to cut off for a time during the existence of the epidemic, all maritime communication between the Arabian ports and the Egyptian coast,* leaving open to the hadjis, for their return to Egypt, the land route followed by the caravan. In other words, the pilgrims should be made to perform quarantine, either on the spot for those who might elect to wait the termination of the epidemic in the Hedjaz, or in the desert for the greater number who would follow the caravan.

There would be no reason to fear that the complete prohibition of the return by sea would give rise to any danger of collisions occasioned under the pretext of regulating the embarkation, considering that the pilgrims, having nothing to hope for in that direction, would have no interest in giving themselves up to violence.

Now we proceed to show how we understand the execution of this measure.

In the first place, its execution would naturally be entrusted to the Ottoman Government, in concert with the Egyptian administration, and if necessary, with the aid of the allied Governments in the matter of naval help.

It would necessitate the concurrence—

1*st.*—Of the Ottoman Sanitary Commission sent to the Hedjaz which would show the sanitary condition of the pilgrims.

2*nd*—Of some men-of-war to interrupt maritime communications; and

3*rd.*—Of an organised surveillance of the Egyptian coast to oppose landing in the event of the rules being infringed.

This being so, the execution of the measures should be proceeded with as follows, of course with any modifications deemed proper by the Conference:

1*st.*—In the event of the manifestations of cholera among the pilgrims, the members of the Ottoman Commission, assisted if necessary, by other physicians commissioned *ad hoc*, should report the fact to the local authorities as well as to the men-of-war stationed off Jeddah and Yambo, and should also at the same time send intimation of the fact to Egypt.

2*nd.*—On the declaration of the abovementionod physicians, the authorities should proclaim the prohibition, until further orders, of all embarkation, and should invite the pilgrims bound to Egypt to take the land route.

3*rd.*—At the same time, the men-of-war should remove to a distance all steamers or sailing vessels which might happen to be in the ports of embarkation, and should exercise as strict a watch as possible with a view to prevent any clandestine departure.

4th.—On the receipt of advice of the presence of cholera among the pilgrims, the Egyptian authorities should forbid entrance to everything and everybody from the Arabian coast, starting from a point south of Jeddah, which should be determined; moreover, they should assign to the infected vessels, after re-victualling them if necessary, a locality on the Arabian coast, Tor, for instance, where they should perform quarantine.

5th.—As for the caravan, it should, as usual, be stopped at several days' march from Suez; there it should be visited by a Medical Commission, and it should not be allowed to enter Egypt until its sanitary condition was recognised to be exempt from danger.

6th.—Regarding the pilgrims bound to India or other countries beyond the Red Sea, it would be best, in order to avoid the peril of a partial embarkation to subject them to a general rule, *i e.*, to await the termination of the prohibition. Perhaps, however, it might be possible to assign them a special port of embarkation several days' march to the south of Jeddah.

7th.—The prohibition of embarkation would cease *fifteen days* after the last case of cholera reported in the Hedjaz.

8th.—The prohibition against performing quarantine in Egypt would not be applicable to ships coming from beyond the Red Sea; these ships, with foul bills of health (showing cholera) should be subjected to the rule in force at Suez in such cases.

Such, gentlemen, is the proposal we have the honor of submitting for your consideration. It responds to the object for which the Government we represent moved the convening of this Conference. It appears to us to invite all the guarantees and all the advantages that could be desired. It in no way binds us in the future, that is to say, that, without opposing any obstacle to the employment of such measures as the Conference may deem proper to prevent the importation of cholera into the Hedjaz, or to definitive precautions in regard to Egypt, it offers notwithstanding a substantial means of guaranteeing ourselves from the present moment, against a proximate and redoubtable eventuality, and thus affords us the security necessary for deliberating with calmness on the other measures which will be submitted to us.

Lastly, it leaves to the Ottoman Government the full plenitude of its authority and dispenses us from direct intervention in the delicate and perilous question of the sanitary police of the pilgrimage.

The only disadvantage of our proposition would be should a case occur to disturb temporarily the trade carried on in the conveyance of the pilgrims by sea; but this inconvenience does not seem to us to be so serious that it can be allowed to weigh in the balance for an instant.

For these reasons then we have had no hesitation in submitting this proposition to the Conference at its first sitting.

Whatever may be the result of your deliberations on this subject, we think that your decision ought to be submitted immediately for the concurrence of the Sublime Porte and all the Governments represented in this Conference, in order that it may be carried into effect with as little delay as possible.

Consequently, we ask for the immediate nomination of a Committee to examine our proposition and report upon it at the next meeting of the Conference.

13*th February*, 1866.

A. DE LALLEMAND,
A. FANVEL,
Delegates of the French Government.

No. 4, dated 23rd February, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—*The* EARL OF CLARENDON, K. G., *&c. &c.*

With reference to our despatch No. 3 of the 16th instant, we have the honor to report that, at the subsequent meetings of the Committee appointed by the Conference to examine the proposal of the French delegates for the adoption of immediate measures with a view to prevent the importation of cholera by the pilgrims now on their way to Mecca, several differences of opinion arose; more particularly when it was announced by the Turkish delegate, in answer to questions which the Committee had put to him, that there was great reason to fear that, in the event of the pilgrims being required to choose between returning to Egypt by land or remaining at Jeddah until the fifteenth day after the final disappearance of cholera, there might be a deficiency of provisions and water, as well as of means of transport, for those preferring the land journey. Mr. Bartoletti then said that it was his intention to propose some modification of the French measures, upon the principle of regulating the departures by sea from Jeddah, so as to prevent the steam vessels from being overcrowded, and of providing quarantine establishments at three or four points on the shores of the Red Sea in the neighbourhood of Suez.

When the Conference met yesterday, it was announced that the Committee had not had time to draw up its report, and an adjournment of the debate was asked for. After much discussion, in the course of which it was contended that the adoption of measures was of such urgency that the debate should be at once proceeded with without waiting for the Committee's report, it was decided to adjourn until Monday next the 26th instant, and that the debate should then take place, whether the report of the Committee is ready or not.

The Committee met afterwards to hear the details of Mr. Bartoletti's proposal to which various serious objections were raised

by Dr. Fauvel. An amendment was proposed by Dr. Sawas, the Persian delegate, suggesting that Yambo should be made a free port of embarkation. According to him the journey from Mecca to Medina occupies a fortnight: and as the pilgrimage is more complete when it includes Medina, the pilgrims would not object to take that route: and after spending four or five days there in the performance of religious observances, they would not reach Yambo until nearly a month after their departure from Mecca. Besides the beneficial effects of such a long land journey as regards disinfection from cholera, this plan would have the advantage of giving a month's more time for sending ships and provisions to Yambo for their removal.

As there was no chance of arriving at an agreement with respect to any of the plans proposed, Mr. Bartoletti was requested to draw up the report of the Committee, describing the divergent views of its members, for presentation to the Conference on Monday.

There are so many objections to every plan which has been hitherto proposed, and the information upon which we are asked to vote is so insufficient for forming our judgments, that unless we should in the meantime be otherwise instructed by your Lordship, we shall not feel justified in voting for the hasty adoption of any such measures, although there is great reason to fear that those proposed by the French delegates will be adopted by a large majority of the Conference; the delegates of Turkey, Russia and Persia being so far the only members who seem inclined to oppose them.

No. 4, dated 28th February, 1866.

From—JAMES MURRAY, ESQ., *Foreign Office,*

To—MR. STUART.

I sent you to-day the following telegram in cypher:—

Her Majesty's Government approve your proceedings as reported in your despatch No. 3, and concur in course maintained by Dr. E. Goodeve at first meeting of Committee for carrying out the work of the Conference to be absolutely necessary before deciding upon measures of precaution.

No. 5, dated 8th March, 1866.

From—J. MURRAY, Esq., *Foreign Office,*

To—MR. STUART and DR. GOODEVE.

I have to acquaint you that I approve the course you propose to pursue as reported in your Despatch No. 4, of the 23rd ultimo, in regard to the plan suggested by the French delegates for preventing the importation of cholera by pilgrims on their way to Mecca.

Dated 2nd March, 1866.

Telegram to—LORD LYONS, *Pera.*

In Cholera Conference yesterday the principle of French proposal was carried by a large majority, in spite of Turkish declaration that the Porte considered the execution of such a measure impossible. The British, Turkish, Russian, and Persian Commissioners alone voted against. Austrian diplomatic Commissioner abstained. Should we not have naval force at Jeddah? Besides other possible complications, our Indian pilgrims may be in a critical position if the Porte is driven to act upon the French proposal, and the excitement might spread to Mussulman population of India and its north-west frontier.

Dated 4th March, 1866.

Telegram to—LORD LYONS, *Constantinople.*

The British Cholera Commissioners report that the details of French proposition were passed in Conference yesterday with several modifications, including the following: Indian pilgrims to embark at Jeddah if local authorities think they can do so without danger. Article 8 suppressed altogether, as the measures only apply to pilgrim ships. The British Commissioners did not take part in the discussion, and requested that their abstension should be mentioned in proposal.

Dated 10th March, 1866.

From—J. MURRAY, Esq., *Foreign Office,*

To—The Under Secretary of State, India Office.

With reference to my letter of yesterday's date, I am directed to request you will inform the Secretary of State for India that Lord Clarendon would be glad to be favored with any observations which Earl de Grey and Ripon may have to offer respecting the proceedings of the Cholera Conference at Constantinople with regard to Indian pilgrims.

Dated 12th March, 1866.

From—J. MURRAY, Esq., *Foreign Office,*

To—The Under Secretary of State for India.

Nos. 5 and 6.

With reference to my letter of the 10th instant, I am directed by the Earl of Clarendon to transmit to you two further Despatches from the British Members of the Cholrea Conference now sitting at Constantinople; and I am to request that, in laying the same before Earl de Grey and Ripon, you will move him to inform Lord Clarendon whether the India Office has any knowledge of the Indian pilgrims to Mecca having brought the cholera with them.

No. 5, dated 27th February, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—The Right Hon'ble the EARL OF CLARENDON, K. G., &c., &c.

The meeting of the "Commission de Programme" took place on Saturday the 24th instant, and agreed upon a plan of proceeding to be submitted to the Conference at an early sitting.

We enclose two printed copies of the proposed plans.

The members of the Committee reserved to themselves the power to object to any particular parts of the scheme during its discussion by the Conference. The plan is mainly that proposed by Count Lallemand, referred to in our report No. 3. It contains, however, some modifications introduced by members during the discussion.

We think that the scheme, especially in the first section, contains several questions which cannot be satisfactorily solved; but as they are comprised in the circular of Monsieur Drouyn de Lhuys, and cannot reasonably be excluded from the programme proposed by the French Delegate, care has been taken that the study of the history, course, and mode of spreading of the epidemic of 1865 shall be taken into consideration; and this, we think, is the most important part of the enquiry.

We fear that there is still a strong disposition in the majority of the members of the Conference to get over this part of the enquiry rapidly. They seem impatient of every investigation which prevents immediate deliberation upon protective measures.

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO MINUTE No. 7.

Report on a Draft Programme of the labors of the Conference, drawn up in the name of a Committee composed of MM. Dr. Sotto, Dr. Monlau, Count de Lallemand, Vice-President; Dr. Goodeve, Vernoni, Mirza Malkom Khan, Dr. Muhlig, Dr. Pelikan, and Salih Effendi, President.

(By Dr. Muhlig, *Secretary-Reporter*).

Gentlemen and very Hon'ble Colleagues.—In submitting for your consideration the programme of the labors with which the Conference will have successively to occupy itself, the Committee to which you have assigned this duty is of opinion that it should, in the first place, show you the principles it has followed. You will agree that the object of our labors possesses an essentially practical character, viz., to propose the most fitting methods to prevent, if possible, the periodical invasions of Asiatic cholera. We shall have, therefore, to see how we can suppress this scourge in its origin, and how we can arrest it in its progress.

This portion of our labors will necessarily comprehend the examination of the system at present in force, as well as the consideration of new measures to be proposed for the future. But you understand well, gentlemen, that these practical studies cannot be made with any chance of success, unless we previously form clear and well-defined opinions on the disease against which we are called upon to adopt measures. So that, before, touching upon the practical part of the question, we should occupy ourselves in the first place with certain preliminary questions of a nature more specially medical,—that, for instance, of the origin and mode of propagation of cholera. And here we are specially bound to establish distinctly in what our positive knowledge of the subject in question consists, leaving to the study of learned bodies everything foreign to the practical object of the Conference.

What we have said leads us naturally to divide our labors into three great groups:—The first, comprehending the question of the generation of cholera; the second, that of its transmissibility and propagation; and the third and last, the most important question for us, that of preservation. Each of these groups will raise up a certain number of questions which should more particularly attract your attention, and which we are about to submit to you, not with the object of assigning limits to the studies of the Conference, but simply to invest them with that order which is indispensable for the purpose of arriving with certainty and promptitude at a practical result. The Committee does not hide from itself that, in the actual state of our knowledge, several of the questions we are about to lay down will very probably not receive an altogether satisfactory solution. Yet

even a negative result will have its advantage in a practical point of view, in this way—that it will aid us in avoiding unsafe and treacherous ground, and in laying the foundations of our edifice on a more solid basis. It would, perhaps, be fitting to add to these three groups a fourth, in which the practical application of the measures adopted by the International Conference would be considered.

And now we proceed to the details of our programme.

1ST GROUP.—*Of the generation of Cholera.*

This group embraces the following questions:—

Does epidemic cholera develope itself spontaneously, under certain conditions, in our countries, or is it always brought from without?

What are the countries in which it can be shown incontestably that cholera has been generated?

Does cholera always exist in India, or only at certain times and at certain seasons of the year; and does it show itself with more violence at particular seasons than at others?

Are there certain localities in India possessing the exclusive quality of engendering cholera, or which are at any rate peculiarly favorable to its development?

Do we know the causes by the concurrence of which cholera is generated in India, or in any other locality, as well as the circumstances causing it to assume periodically an epidemic form?

Is there an original focus of cholera, permanent or periodical, in the Hadjaz; if there is, under what conditions does it develop itself?

Is there not reason to fear that cholera may become acclimatised in our countries?

How are we to understand the immunity against cholera which certain localities always appear to enjoy?

2ND GROUP.—*Of the transmissibility and propagation of Cholera.*

Is the transmissibility of Cholera proved at the present day by facts admitting of but one interpretation; taking the hypothesis for granted, what are the principal facts proving it?

Are there conclusive facts forcing us to admit that cholera may propagate itself by certain atmospheric conditions, as for instance, by the winds, by the proportion of ozone in the atmosphere, &c.; or rather do certain natural causes only favor its propagation?

Do the various epidemics which have traversed the world since 1817 present certain common traits in their progression, or certain differences connected with the different conditions under which the ways of communication and commercial transactions have successively presented themselves?

Is it man, coming from a place infected by cholera, who imports the disease into places hitherto uninfected; and, if this is so, under what sanitary conditions should he find himself in order to be able to import the disease? Does the arrival from a choleraic focus of a single individual suffering from diarrhœa suffice to give rise to the development of an epidemic?

Can cholera be imported by luggage, merchandise, &c., and under what circumstances?

Transmission of cholera by water, latrines, sewers, corpses, &c.; importance of dejecta.

What difference is observed in the mode of propagation of cholera according to the different ways of communication: by sea and by land, for instance, highroads, rivers, railroads, desert routes, steamers, sailing vessels, &c.?

It is not possible, and even probable, that, since, (owing to the development of steam navigation) the traffic with India has in great measure taken the sea route, the invasions of cholera by land have become rarer, while the danger increases on the side of the sea?

When a choleraic focus is developed on board a ship, what peculiarities does it present, what is its probable duration, and its tenacity?

Does not the assemblage of great masses of men, as for instance, fairs, the movements of troops, pilgrimages, &c., singularly facilitate the propagation of cholera, and in what manner?

What part has been played by the pilgrimage to Mecca in the choleraic epidemics which have succeeded each other down to the present day?

Influence exercised on the violence of choleraic epidemics by the hygienic conditions of a locality.

From the facts already known with regard to the transmissibility and propagation of cholera, can anything precise be deduced as to the generating principle of the disease, or, at any rate, as to the conditions of its penetration into the organism, the channels by which it escapes from it, the agent acting as its vehicle, the period during which it retains its morbific activity; in a word, as to all the attributes the knowledge of which is important in a prophylactic point of view?

General review of the progress and mode of propagation of cholera during the epidemics of 1865.

3RD GROUP.—*Preservation.*

A.—Preventive means.

Are there preventive means permitting of the extinction of the original foci of cholera in India; are there means of suppressing the foci occasioned by importation?

Are there measures of public and private hygiene, sanitary measures, applicable on a scale sufficiently great to be able to destroy or sensibly diminish the predisposition to choleraic infection, such as the sanitation of ports, the mode of burial of corpses, &c.?

B.—Restrictive means.

Should we not start with the fundamental principle that the closer to the primitive focus these measures are applied, the more their efficacy may be reckoned upon?

What is the utility of sanitary cordons, and where and how should they be applied?

Temporary interruption of communication with infected places, prohibition of emigration, of fairs, &c.

What are the lessons of experience with regard to the systems of quarantine at present in force in various countries against the invasions of cholera: have we ground to hope for better success from quarantines established on some other basis?

Question of the incubation of cholera; what is its import in the question of the quarantines proposed against cholera?

Is it not necessary to choose, for lazarettos, certain defined localities far from centres of population and ways of communication?

Difference to be established between quarantines of observation and rigorous quarantines, and the determination of their duration. What difference should be established, in connexion with this, between individuals and their luggage, merchandise and ships, accordingly as there have or have not been cases of cholera on board, and between the crew and passengers?

Should the days spent on the voyage be reckoned as days of quarantine, and if so, in what cases?

Foul bill of health, suspected bill of health, clean bill of health, in their application to cholera.

In a hygienic point of view, what are the guarantees to be exacted from lazarettos and cholera hospitals in general?

Disinfection of ships, dwellings, effects, &c.

Powers and duties of sanitary physicians.

Is it not necessary to establish a rule that pilgrims from India, or any other country where cholera exists, should always undergo a quarantine of observation; and, if necessary, a rigorous quarantine in a fixed spot on the Arabian coast, before they are permitted to proceed to the general rendezvous of the pilgrims at Mecca?

Sanitary police regulations of the pilgrimage.

Is there occasion to apply measures of quarantine to arrivals from the East Indies in general; and under what circumstances, and to what extent?

What measures would it be well to adopt in the event of a threatened invasion of cholera either by sea or by land?

Question of posts of observation for sanitary physicians, for instance, at Jeddah, Yambo, Suez, Alexandria, in Persia, &c.

If we weigh, on the one hand, the disadvantages resulting to commerce from restrictive measures; and, on the other, the disturbance occasioned to industry and commercial transactions by an invasion of cholera, on which side do we think the balance would incline?

4TH GROUP.

What definitive form should the Conference give to the resolutions it may adopt?

The solution of the questions comprised in the 1st and 2nd groups of our programme being indispensable to enable the Conference to enter upon the great task imposed upon it, your Committee proposes, in conclusion, gentlemen, to appoint a Committee of eleven members, which should form itself into Sub-committees, with the object of studying these questions, and submitting to you the result of its investigations with as little delay as possible.

DR. SOTTO, DR. MONLAU, A. DE LALLEMAND, DR. GOODEVE, A. VERNONI, MIRZA MALKOM KHAN, DR. PELIKAN; SALIH, *President*; DR. MUHLIG, *Secretary-Reporter*.

No. 6, dated 27th February 1865.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—The Right Hon'ble the EARL OF CLARENDON, K. G., *&c. &c.*

In continuation of our Report No. 4 of the 23rd instant, we have the honor to inform your Lordship that at a meeting of the Conference which took place yestertay, the Report of the Committee appointed to consider the French proposal for the adoption of immediate measures in the Red Sea was read by the Secretary, and that Salih Effendi then read a statement in support of Dr. Bartoletti's amendment. In this statement, of which two copies are herewith enclosed, Salih Effendi objects to the French proposal and suggests protective measures in the shape of quarantine in the Gulf of Suez.

After having this, and observations from several members, including Dr. Sawas' arguments in favor of his own amendment, the meeting adjourned until to-day, upon the motion of Dr. Fauvel.

To-day the sitting was chiefly occupied in hearing Dr. Fauvel's development of his proposal, and his condemnation of the Turkish amendment. His speech was long and eloquent, and appeared to produce a great impression upon the majority of the Conference. The debate was shortly afterwards adjourned until the 1st March.

We have also the honor to enclose two copies of the Protocol of the first sitting of the Conference, the same having been handed to us to-day.

INTERNATIONAL SANITARY CONFERENCE.

Proposed amendment of the urgent proposition of the Delegates of the French Government, presented by the Delegates of the Sublime Porte.

GENTLEMEN,—Turkey being exposed, more than any other country, to the importation of cholera morbus, the Ottoman Government would be the first to accept and put into practice the proposition presented by the delegates of the French Government, if, by putting the proposed measures into execution, it could hope to acquire efficacious and durable guarantees against the irruption of a fresh epidemic.

We make it a duty, therefore, to assure you that it is neither from ill-will, nor a spirit of opposition that we propose, in our quality as Delegates of the Sublime Porte, to submit a project of amendment for your appreciation.

In calling your attention to the inconveniences and difficulties which we think render it almost impossible to put the proposed measures into execution, our only object is to invite discussion on such a serious subject.

The discussion ought to be deep and exhaustive, in order that the resolutions arising out of it should be of indisputable utility and connected with the true interests of peoples and the exigencies of civilization.

The proposition of the Honorable French Delegates may be summed up thus:—

1*st*.—The danger against which it is important that we should forearm ourselves consists almost entirely in the *return of the pilgrims by sea.*

2*nd*.—The danger would consist in the probability of the importation of the Indian disease into Egypt.

3*rd*.—It would suffice, to avert this danger, to adopt one sole but very efficacious measure, to wit, *the entire prohibition of the return of the pilgrims by sea.*

It must be confessed that this proposition, as drawn up, has all the appearance of truth, of logic, and appropriateness. But if, at the first glance, it appears seducing, an attentive and strict examination lays bare its weak points and especially its practical defects.

In fact, gentlemen, this proposition is nothing less than the solution of one of the most difficult and most controverted of scientific questions. Before bringing forward its numerous inconveniences, and the serious difficulties opposed to its application, we should like to commence with some scientific arguments capable of invalidating the assertions of the honorable delegates of the French Government.

It is necessary to put the question clearly, for on its solution depends, we believe, the fate of the proposition with which we are pre-occupied.

The question is this:—If a murderous epidemic has already broken out in the Hedjaz, before the departure of the pilgrims, it is thought to forearm Egypt against the danger of the importation of the Indian disease by prohibiting the return of the pilgrims by sea.

The epidemics of 1830-31, and some other prior and subsequent epidemics, imported into, and propagated in, Europe by land routes, successfully combat such an assertion.

In the first International Conference, the Chevalier de Rosemberger, delegate from Russia, stated that at Odessa the plague and cholera were unable to penetrate by sea, thanks to wise sanitary measures; but that the last epidemic of cholera but one had been imported by land.

It is also known that cholera, in the last epidemic but one, was communicated through France to Piedmont by land, and that from Peidmont it was imported by land again into Tuscany. And yet the ports of Genoa and Leghorn had been closed against all suspicious arrivals.

For the sake of brevity, we refrain form mentioning other analogous and very conclusive facts. At the present day all competent men admit the well-proven fact that cholera spreads itself by way of the most frequented communications connecting the great centres of population. If cholera affects a kind of predilection for the course of rivers or the coasts of seas, very often it prefers to follow great land routes in its march. Many epidemics abundantly demonstrate this.

To maintain the contrary thesis would imply the negation of most authentic facts.

Who then shall dare to say that Egypt will be preserved because *all return by sea* is refused to the pilgrims?

It is true the danger will be diminished; but has the Conference the right to enchain personal liberty, to hamper and arrest commercial transactions, to impose a most severe law on thousands of men, with the mere object of lessening an evil it is not able completely to suppress, and which may even be occasioned in spite of the violent measures adopted by it? We do not believe that this is the mission

of the Conference; and we prefer to hope that the task which is incumbent on it is to ameliorate, in a hygienic point of view, the fate of the pilgrims and the peoples with whom they mingle, at the same time upholding the great interests of Governments.

The report and the circular of His Excellency M. Drouyn de Lhuys are conceived in this sense.

What we have just said concerns the theoretical part of the proposition of the honorable delegates of the French Government.

This will render it easier to understand the remarks and observations we are about to submit relative to its practical part, in the hope that, with the aid of your lights, this important question will be solved in the sense best corresponding, in our belief, with the exigencies of the situation.

The inconveniences and difficulties attributed by us to the practical part of the proposition of the honorable French Delegates are as follow:—

1*st*.—That portion of the Ottoman territory called the Hedjaz is a sterile country, particularly in cereals, which makes it necessary that it should be incessantly replenished with supplies of provisions. Now, to make the interdiction of the return by sea efficacious, it would also be necessary to prohibit ships from approaching the towns to which these provisions are being constantly brought.

This must of necessity be carefully looked to—the hadjis who have gone this year by sea to the holy places will do all they can to get back to their homes by sea—they will endeavour to seize upon every ship within their reach—a collision will be inevitable, and it may even be predicted that a revolt must be the result.

It becomes a matter of necessity, therefore, to forbid the approach of ships to ports and roadsteads to which the pilgrims go. But this would expose to famine, not only the pilgrims, but also the inhabitants of the maritime towns in which they congregate.

2*nd*.—Supposing even that it is possible to prevent steam vessels and merchant ships from entering ports frequented by the pilgrims, how could the hadjis be prevented from embarking on djerims, on barques and boats, and proceeding home by sea. And if this happens, the danger will be very much greater than if they were permitted to take passage on board steamers or sailing vessels under the surveillance of the local sanitary authorities, and also under the surveillance and responsibility of the physicians on board. Crowded together in barques, which certainly will take longer in arriving at their destination than large vessels, the hadjis, who will have brought with them the Indian disease, or its germ, will be obliged to make several stages: they will reach many places in a sick or dying condition, and will spread the disease much more, than if they had travelled at their ease on spacious and well kept vessels.

Another inconvenience would result, *viz.*, that the sanitary authorities of the whole Arabian sea-coast would have to subject all barques, without distinction, to a severe quarantine.

3rd.—The interdiction of the return of the pilgrims by sea would give rise to a serious difficulty in regard to their return overland. Let no illusions be given way to as regards the gravity of this difficulty, which, to all who are well acquainted with the Hedjaz and the mode of formation of the caravans, is almost insurmountable, and would of itself suffice to render the measure of the interdiction of the return of the pilgrims by sea altogether impracticable.

In fact, gentlemen, compelled as they would be to travel by land, it would become necessary for the pilgrims to be provided with a sufficient number of camels. Now let us see whether this is possible.

Since the different points of the Red Sea have been connected together by the Egyptian and English steam navigation companies, the number of pilgrims making the land journey has very much diminished.

In support of this assertion, let us cite the following facts:—

1st.—The Damascus caravan, which comprises the pilgrims from Asia Minor and those who pass by Constantinople, last year consisted of only a thousand persons, while formerly it amounted to 12 or 15,000.

2nd.—The Egyptian caravan, formerly very numerous, consisted last year of only 6,000 pilgrims.

Where then will the pilgrims be able to find the requisite number of camels? Those to be found in the Hedjaz would be altogether disproportionate to the number of hadjis unprovided with the means of transport overland. They would scarcely be able to get a thousand camels from the conductors of the small caravans which go to Mecca and Medina before and after the ceremonies of the sacrifices.

According to Dr. Gianelli, who in his last work, *Le Second Congres Sanitaire International*, attests the fact, last year the hadjis in the holy places amounted to the extraordinary number of 200,000. The exact number of the pilgrims this year is not yet known, but there is reason to believe that it is very high. Taking only the half, we would have this year 100,000 pilgrims, the greater part having reached the Hedjaz by sea. How then could the caravan be joined by those pilgrims who would not be able to find the means of transport overland to their homes?

Let the Ottoman or Egyptian Government, it will be said, look to the matter. *The thing certainly will not appear easy to any but those who do not know that last year*—and it is Dr. Bartoletti who informs us of this fact—from 18 to 20,000 pilgrims travelled by sea. Would it be an easy matter, we ask, for the richest and best organised Government to procure 18 to 20,000 camels within the space of a month and a half, reckoning from the present moment?

In the absence of camels, then, what course are the pilgrims to adopt? Is it not evident that they will prolong their stay at the holy places? Hitherto they have remained there for from three to five days, rarely as many as seven; and it is a proven fact that the great reservoirs of water at Mecca and Medina had become dry by the time the pilgrims had left.

Nobody is unaware that there is a want of drinking water in almost every town of the Hedjaz. These towns possess only as much as is contained in some cisterns and wells. The supplies of provisions for the towns are regulated also according to the population they contain. The traders know the period when the great floating population of pilgrims detaches itself from the fixed population, and then they also cease to furnish the towns with provisions. Here, then, we see the whole of the Hedjaz threatened with a want of water and provisions.

What would be the deplorable consequences, we may even say the calamities, which would result?

The assemblage and crowding, indefinitely prolonged, in towns already compromised beyond expression, would infallibly result in the creation of immense pestilential foci,—not one of their inhabitants would survive for more than a few days,—and these towns of living, sentient beings would soon be transformed into necropoli. But if a murderous epidemic devastates the holy cities, if famine and thirst multiply the ravages and horrors of the Indian scourge a hundredfold, can we believe that their population—native or foreign—would rest passive spectators of so many calamities? Can it be thought that they would resign themselves to death as quietly as the sheep and camels slaughtered by them during the sacrificial ceremonies?

Independently of this, and leaving aside the want of camels, the desert route itself, such as it is at the present day, cannot provide a caravan, as large as the one we are supposing, with the means of subsistence to the end of the journey.

When the pilgrims took the desert route by choice, they were in the habit of making several stages during the journey. From Damascus to the Hedjaz several forts had been constructed close by wells or reservoirs intended for the caravan. These forts were sufficiently garrisoned, with a view to the protection of the caravan against the attacks of the Bedouins who tried to seize upon the wells *vi et armis*. Many of these forts and wells still exist, but the water would not suffice if the caravan were very numerous.

We have to mention another and most serious and grave disadvantage with respect to the pilgrims from the south, who to the number of 25 or 30,000 arrive every year in the Hedjaz. These are the pilgrims from the south, coming from the British possessions and other places in Asia *viâ* the Straits of Bab-el-Mandeb.

This passage occurs in the proposition of the honorable delegates of the French Government:—

"Regarding the pilgrims bound to India or other places beyond the Red Sea, it would be best, to avoid the peril of partial embarkation, to subject them to a general rule, *viz.*, to await the termination of the interdiction: it might, however, be found possible perhaps to assign to them a particular point of embarkation several days' journey to the south of Jeddah."

We are obliged to confess, gentlemen, that we do not know whether there is several days' journey to the south of Jeddah, any point whatever where an army of pilgrims, amounting to 25 or 30,000 men, could be sheltered for several days. And if this place exists, what is to be done to supply it with provisions and water?

It is a question we cannot solve: we have carefully looked over the map for such a point, and have not found it.

We think, therefore, that this measure would be impracticable, even if it were desired to encamp the southern pilgrims around Jeddah or in Jeddah itself.

Such, gentlemen, are the inconveniences and dangers, such are the serious difficulties opposed to the full and entire adoption of the proposition of the French Delegates.

We are greatly pained to find we cannot agree with them, and to be under the necessity of asking for the amendment of their proposition.

We have found ourselves placed in this position against our will, and this is why, without any pretension, without any after-thought, with the frankness imposed upon us by the sentiment of public duty, we have permitted ourselves to expose what have appeared to us to be its weak points.

But the case is urgent, the peril eminent, and the necessity of action imperious.

It is necessary then, without delay, to adopt efficacious measures, easy of application, before the return of the pilgrims.

The measures we proposed, and which we believe to be of immediate utility, are very much like those proposed by the French Delegates.

They are as follow:—

1*st.*—To render the return of pilgrims by sea as difficult as possible, without, however, going so far as complete interdiction.

Instead of imposing what they would consider a despotic and unjust law upon them, let us endeavour, either by the counsel and advice we will give them, or by the obstacles we will raise up in their path without their knowledge, to make the pilgrims take the land route spontaneously and of their own free will.

To provide against every eventuality, and to prevent any serious collision, the Ottoman Government will augment its garrisons in the various ports, and will place garrisons where there are none at present. In the same way some Egyptian men-of-war will be stationed off the ports.

2nd.—The Ottoman Government will take upon itself the duty of choosing, according to the indications and instructions given either by the Conference or the sanitary authorities of the Empire, three or four suitable localities, as far as possible from populous centres, on the eastern coast of the Red Sea, for the establishment of provisional lazarettos and also of encampments and barracks. As the first arrivals pass through their quarantine, they will be replaced by others until the complete evacuation of the Hedjaz by the pilgrims. It is to be clearly understood that physicians and apothecaries are to be attached to these lazarettos, and that they are to be provided with medicines and every thing necessary for the sick. Every place where a lazaretto is established is also to be provided with provisions and drinking water. The Government of His Majesty the Sultan, which does not recede before any pecuniary sacrifice, has already decided on augmenting the number of physicians composing the Commission of the Hedjaz.

The pilgrims, before starting for Egypt, will have to be subjected to a quarantine, of the time and form desired, in one of the lazarettos on the coast of the Red Sea.

We think, gentlemen, we have said enough to induce you to discuss the amendment we have the honor to submit for your consideration. It will receive, no doubt, thanks to your experience and lights, the rectifications and the development it stands in need of.

We shall esteem ourselves happy in having contributed, to the full measure of our feeble means, to throw light upon the important question which the delegates of the French Government have the merit of having brought to your attention. This question has appeared to us to be so grave that we have wished not to be the last to take it into serious consideration. Its definitive solution appertains to you, and it will be the most signal proof of your solicitude for the prosperity of peoples and the progress of civilization.

PERA: GALATA-SERAI; *The 26th February* 1866.

SALIH.
BARTOLETTI.

Dated 13th March, 1866.

From—J. MURRAY, Esq., *Foreign Office*,

To—*The Under Secretary of State, India Office.*

With reference to my letters of the 10th and 12th instant, I am directed by the Earl of Clarendon to transmit to you, for any observations which Earl de Grey and Ripon may have to offer thereupon, the accompanying Despatches from Lord Lyons and from the British Commissioners respecting the further proceedings of the Cholera Conference at Constantinople, and I am to request that these original papers may be returned to this Office with your reply.

Lord Lyons, No. 68, March 2.
British Cholera Commissioners, No. 7, March 2.

No. 68, dated 2nd March, 1866.

From—LORD LYONS,

To—*The Right Hon'ble the* EARL OF CLARENDON, K. G., &c.

The British Cholera Commissioners have called my attention to the proceedings of the Conference, and more especially to the adoption by the majority of that body yesterday of the principle upon which is based the proposal of the French Delegates for the immediate interruption of all maritime communications between the Arabian ports and the Egyptain coast, in the event of cholera breaking out amongst the pilgrims of this year who are already on their way to Mecca. The Commissioners represent that serious complications may possibly arise if the Porte should be induced by the French Government to carry out the measures proposed. The Porte considers that the execution of such measures is impracticable or next to impossible, and it made a declaration to that effect through its delegates to the Conference yesterday. It seems, however, that in consequence of objections raised by the French and other delegates to the reception of any direct communication from the Turkish Government, Salih Effendi eventually withdraw the declaration. It was in spite of this incident that the French proposal was carried.

To speak, first of all of the difficulties in which the Porte might be placed in attempting to close the Arabian ports, including Jeddah, to the exit of the pilgrims who have gone to Mecca in complete ignorance of the obstacles which may be placed in the way of their return, it is represented that it cannot be a matter of doubt that these persons will be exposed to sufferings for which they are quite unprepared, such as want of provisions, of water and of means of transport, and to much consequent sickness and death; that the prolonged agglomeration of masses of human beings so situated will require a considerable armed force to control them, and be likely not only to lead to collisions and massacres amongst themselves under the influence of panic, but also to imperil the lives of the Christain inhabitants of

Jeddah, should the measures taken be attributed to the pressure of the Christain powers. It is feared that in either case there would be a general outcry amongst the Mussulman populations, both in Arabia and in Turkey, against the Sultan and his Government as having taken the first step towards the suppression of pilgrimage, and that there might even be an outcry which would be menacing to the Sultan's throne.

To turn to more immediate British interests: The proposal contemplates the forcible detention at Jeddah of the Indian and Javanese, as well as of the pilgrims from the north and west, unless a separate port of embarkation can be found within a reasonable distance to the south of Jeddah. The British Commissioners believe that such a port cannot be found nearer than Hodeida or Moka; as the port of Gonfudah, which has been indicated by the French as affording all the conditions required, is said, by persons likely to be better informed, to be quite inadequate both in respect to shelter and to depth of water for the 50 or 60 ships which trade in the conveyance of the Indian and other eastern pilgrims. At all events, a considerable naval force would be required to prevent the ships, whether at Jeddah or off other points on the coast, from communicating with the pilgrims on shore. It is true that the proposal talks of maritime assistance being rendered, if necessary, to the allied powers. For this, therefore, as well as for other eventualities, it is necessary that we should be prepared. The reason alleged for detaining the Indian pilgrims, when it would appear to be so much more advantageous for Europe to get rid of them as quickly as possible, is that collisions would ensue if Indian vessels alone were allowed to approach the port when all others were excluded. But the danger of collisions would surely not be lessened by the severe measures proposed, and there is another danger still more serious, because on a greater scale, which is pointed out by Dr. Goodeve. He has reason to suppose that there are many of the Indian mutineers settled at Jeddah, by means of whom the excitement caused by the disasters brought upon the Indian pilgrims, with the actual or supposed connivance of Great Britain, might spread to the Mussulman populations of India and its north-western frontier, and cause much discontent in that quarter.

It is possible that our Commissioners may be more alarmed than is necessary with regard to the dangerous consequences of the French proposal; but their objections appear to me to be of so much importance that I think it right to direct your Lordship's attention to them without delay, and in particular to suggest for your Lordship's consideration the propriety of our having a naval force at Jeddah, or some other point in the Red Sea, to watch events and provide for the safety of our Indian pilgrims.

No. 7, dated 2nd March, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON

To—The Right Hon'ble the EARL OF CLARENDON, G. C. B.

In continuation of our Despatch No. 6, dated the 28th ultimo, we have the honor to inform you that a meeting of the Conference took place yesterday, at which the principle of the French proposal was adopted by a large majority, *viz.*, of 17 to 8. The votes for and against were as follows :—

FOR—		AGAINST—	
France	2	Turkey ...	2
Holland... ...	2	Russia ...	2
Belgium ...	1	Persia ...	2
Italy	2	England ...	2
Prussia	2		
Sweden	2	Total ...	8
Portugal ...	2		
Spain	2		
Greece	1		
Austria... ...	1		
Total ...	17		

The Austrian political delegate abstained from voting.

Before the votes were taken, Dr. Bartoletti laid before the meeting in a detailed manner the objections raised by the delegates of the Sublime Porte against the French proposals; and Dr. Sawas, the Persian Delegate, read a full and luminous statement showing the impossibility of the pilgrims being able to return to Egypt this year by caravans, owing to the total absence of camels necessary for the carriage of the travellers and their provisions, and also showing the absence of shelter and probably of food and provision for the large number of pilgrims who would be detained in the Hedjaz in the event of the French proposal being carried into effect. He likewise dwelt upon the danger of revolt and massacre which might be expected to arise under such circumstances. He concluded an admirable address, which occupied about two hours in delivery, with recommending the adoption of the Persian proposal of inducing the pilgrims to visit Medina and afterwards allowing them to embark from Yambo.

After the delivery of Dr. Bartoletti's address, His Excellency Salih Effendi read a statement from the Sublime Porte declaring that it could not undertake to give effect to the French project if it were recommended by the Conference. The production of this as official was objected to by Count Lallemand as partaking of the nature of intimidation on the part of the Sublime Porte. Salih Effendi declared that no such intention was meant, and withdrew it as an official presentation without any vote upon the question of the introduction having been taken.

Mr. Stuart and Dr. E. Goodeve objected to the principle that any delegate should be precluded from communicating to the Conference the nature of any instructions received from his Government.

Dr. E. Goodeve laid before the meeting a statement of the dangers and inconveniences to which the fleet of Indian pilgram ships might be exposed if driven out to sea from the ports of the Hedjaz in the event of an outbreak of cholera in the course of the execution of the French proposal.

We enclose copies of the amendment proposed by Dr. Sawas at the Conference of the 26th ultimo, and also of Malkom Khan's observations in support thereof.

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO MINUTE No. 3.

Proposed amendment of the urgent proposition of the French Delegates, presented by DR. SAWAS, *Persian Delegate.*

GENTLEMEN,—You have just heard read the report of the Committee appointed to consider the project presented by the French Delegates. The project in question, as well as that of Dr. Bartoletti, not having succeeded in gaining the suffrages of the Committee, I have proposed the amendment which you have just heard. This amendment, put forward with a view to conciliation, in my opinion, renders the French project acceptable. That project, thus modified, ceases to present the grave disadvantages to which its execution might give rise, and it retains in great measure its primitive facility of application. Such is my conviction. It may be erroneous, but it is sincere. In submitting it to you, I have not the intention, and still less have I the pretension, to induce you to share my error; on the contrary, I expect you to judge my proposal with the greatest severity. I only ask to be heard with patience and without prejudice.

The proposed amendment differs very little from the fundamental project; I only ask for one single exception to the measure of interdiction in favor of the maritime town of Yambo—a port of the Eyalet of Heeremi Navebi, the chief town of which is Medina.

Medina is the second Arabian town the pilgrims have to visit. Some go there before they visit Mecca, some after. The former are generally those who come from the north, making the journey by land; the latter are naturally those who make the sea voyage, and disembark at Jeddah. It is this latter class that is specially affected by the measures proposed by the French Delegates. The interdiction of maritime communication would evidently be a matter of small account to the pilgrims coming to Mecca overland, especially if they were aware beforehand that they would have to return by the same route.

But it is not so with the others. They must of necessity be in want of the means of transport which it would be impossible for them to procure on the spot. They would be, therefore, condemned to await the termination of the epidemic on the spot.

A truce to illusions, gentlemen! Every pilgrim, to take the desert route, stands in need of some camels; two are necessary for the poorest. Under the burning sun of Arabia, and over the scorching sands of the desert, it is impossible that any man could walk for eight or ten hours a day. Now, taking every thing into account, you have at Mecca a multitude which cannot leave it, which cannot stay in it, and for which some road, other than Jeddah, must be opened. For this road, I propose that of Medina, an intermediate station between the town of Mecca, the centre of the epidemic, and the port of Yambo, which I wish to exempt from the prohibitory measure of the primitive project. In other words, I invite the multitude, famished, thirsty, suffering from cholera, whom it was intended to retain at Mecca; I invite them, I say, to come and embark at Yambo. I open to them a comparatively easy route. I give to their minds a direction lessening the severity and hardship which an altogether exclusive measure would impose upon them.

So much said, let us proceed to the examination of this proposition in its details. Let us suppose that (which God forbid!) cholera breaks out at Mecca, and that the general prohibition of maritime communication is proclaimed. Those of the pilgrims who can leave with the caravan will do so at once, listening neither to our advice nor to the orders of the authorities; but let us see what these same authorities ought to say to those who find it impossible to follow the caravan. For these latter, it will be said, the authorities have only to facilitate the means of departure; they have only to devote to this object the money that they would spend in establishing encampments, and deceptive and pernicious lazarettos; so that they will have the pleasure of seeing the pilgrims depart happy and peaceful, taking the desert route as quietly as lambs. This possibility has been so contested that it seems to me to be idle to re-examine it further in the point of view of material difficulties. I will only say that, even were the authorities in a condition to provide for all the necessities of the irritated and fanatical multitude which they propose to guide, they would still have to be very careful not to disclose the fact that they had closed all the ports of the Red Sea against it. Those amongst you, gentlemen, who know the East, need not be told the reason why. As for those who are unacquainted with our manners, our ideas, and the tendency of the minds of our populations, they would only be able to see untenable paradoxes in the brief explanations it would be possible for me to enter into here. I abstain from entering upon them, therefore, and proceed.

According to my project, the authorities would not find themselves compelled to make declarations subversive of religious order; they would say simply that the port of Jeddah having been condemned for sanitary reasons, steam-vessels would receive the pilgrims at

Yambo, and carry them across to the Egyptian coast, and they would offer their aid to the latter in their voyage. In saying this, the Government would make an engagement which it would find itself able to fulfil—1*st*, because the journey between Mecca and Medina is only a third of the distance the caravan would have to traverse before arriving by the desert route at the isthmus of Suez; 2*nd*, because a caravan leaves Mecca for Medina every year, and with a light sacrifice the authorities might strengthen it, and add to it the pilgrims unsupplied with means; 3*rd*, because every pilgrim is content and happy to visit Medina, and even to repeat the visit. The Government, I repeat, imposes an easy task on itself; it walks in the path of the pilgrims, and points out to them a comparatively short road, the end of which is a point quite in conformity with the tendency of their inclinations, of their convictions, and of their religious exigencies. Arrived at Medina, I cease to concern myself about the fate of the pilgrims; they find themselves on a fertile soil, in a pleasant town; they may, without fear of famine, wait there for the termination of the epidemic. It would be superfluous to tell you that wherever there is pasturage cattle abounds; and that the means of transport, camels, &c., are equally plentiful there for locomotion in the province.

This being so, let us enumerate the inconveniences which are removed by the simple fact of the transport of the pilgrims to Medina. We shall return presently to the question of their embarkation at Yambo:

1*st inconvenience removed.*—At Medina they have means of subsistence for themselves and their animals; while at Mecca they are exposed to death from starvation.

2*nd inconvenience removed.*—That of the dangers which would fall upon Jeddah during the whole time that a famished multitude, a prey to cholera, might be retained at Mecca.

3*rd inconvenience removed.*—That of the sanguinary collisions which would be the inevitable result of any attempt made to supply Jeddah with provisions by sea under the eyes of the famished pilgrims.

These three inherent inconveniences of the French project cease, and even disappear, by the simple fact of the departure of the pilgrims for Medina.

A fourth inconvenience, this last inherent in Dr. Bartoletti's project, also disappears, namely, that of the struggles between armed parties which would be excited, if the French project were adopted, by the partial clearing out and methodical embarkation of the pilgrims of Jeddah.

But I shall be asked who prevents the pilgrims from going to Medina? We proclaim the complete prohibition of maritime communication, and we leave the pilgrims quite at liberty to proceed by land, and await the termination of the epidemic in any part of Arabia they please. If they prefer Medina, let our best wishes go with them. It

is here exactly that we deceive ourselves: the pilgrim will go to Medina when you show him the port of Yambo open, with an organized service of vessels ready to carry him to Egypt, when you facilitate the means of his arrival there; and lastly, when, in so acting, you do not appear to interfere with his most cherished beliefs. With this system, the pilgrim will no longer perceive in absolute measures a hinderance to the fulfilment of a sacred duty,—measures which he, in his ignorance, regards as unjust and hostile. I have said that we deceive ourselves, and I repeat it. We deceive ourselves because we reason like intelligent men; but let us place ourselves, in the point of view of the pilgrims; let us reason for a moment like the pilgrims, and we shall easily understand the whole error. The pilgrims are far from considering our measures to be humane, far from believing that we pre-occupy ourselves with them, and that we have a lively interest in their fate. They are led to see in our interdictions only measures of annoyance to their religious practices, attempts at invading the sacred territory on which they are apprehensive of seeing us place our profane feet. I resume; tell the pilgrim, when he finds himself at Mecca, that you debar him from any kind of maritime communication, and you are sure of seeing him rebel. Tell him, on the contrary, that you only debar him from one port, that of Jeddah; that as a compensation you open to him that of Yambo with new facilities, and you may reasonably entertain every hope of leading him without shock or violence to Medina.

The pilgrims, again, are not the only men in Arabia whom we have to manage; it is necessary, too, that our measures should not be of such a nature as to excite discontent in the tribes and their sheikhs, otherwise we create the most serious embarrassments to the Local Government, if we lay down rules of a kind calculated to impede the free exercise of territorial sovereignty. But to return to our amendment.

The pilgrims would require at least 15 days for the march from Mecca to Medina, where they would stay for two or three days at the holy places, finally taking the road to Yambo. They would take five or six days to arrive there; so that their journey would last for about 25 days,—a lapse of time rendering it very probable that cholera would have left them in the interval. "The journey through the desert," we are told in the French project, "is the best quarantine to be applied to a multitude." And we know, for the rest, that separation and removal are the best means that can be employed for the extinction of this scourge.

Cœteris paribus, to omit nothing, let us suppose it possible for the pilgrims to arrive at Yambo after a month's journey still carrying the cholera with them. Well, it appears to us infinitely easier to subject them at Yambo to the measures proposed by Dr. Bartoletti to be applied to them at Jeddah. We possess abundant proofs of this, which we shall put forward; but first of all, let us again take up the objections urged against us in committee, and which figure in the report you have taken into consideration.

In the first place, it is disputed that the journey from Mecca to Medina occupies 15 days at least. Now, it is of public notoriety that the distance between the two towns is 430 kilometres; it is equally well known that a camel can scarcely do three kilometres an hour in the sandy soil of the desert; and that a caravan can with difficulty march for more than eight hours a day in that burning climate. But to be more accommodating, we grant a journey of ten hours a day. Now the caravan going over 30 kilometres in a day cannot reach Medina before the 15th day, and that without any prolonged halt, which, however, caravans are in the habit of making. This is what the first objection is reduced to. Let us see if the second is better founded.

It consists in the difficulties offered to the pilgrims by the journey between Medina and Yambo. The country is mountainous, it is said unsubdued tribes impede the passage, and altogether the obstacles to be overcome are so great that but few pilgrims, the wealthiest and the bravest—dare attempt the journey. If those who urge these objections against us had charged themselves with the task of supporting our amendment, they could certainly not have been able to accord it higher praise. The greater the difficulties between Medina and Yambo, the smaller the number of pilgrims who will be able to reach the latter town, the smaller the number of pilgrims reaching Yambo, the less the difficulties presented by their embarkation, and so much the less are the disadvantages of our amendment.

From information we have acquired from several pilgrims, we know that the journey between Medina and Yambo is really difficult; and this is why we maintain that the latter port might advantageously be left open. The number of pilgrims arriving there would be comparatively very small; the eight steamers spoken of in Dr. Bartoletti's project might carry them all to Egypt in one voyage, and all danger of collision would have disappeared. There can be no manner of doubt that there will be more accommodation than there will be pilgrims, and the embarkation would be unattended, or nearly so, by any difficulty.

And the other pilgrims, those who cannot go to Yambo, what is to become of them, you will ask me, gentlemen? I shall not exceed my right by replying to your question by another. I shall be justified in asking you what is to become of those pilgrims who cannot follow the caravan, and whom you condemn to remain at Mecca? The fate of both presents only two or three points of difference,—points which again militate in favor of the amendment we propose. According to the French project, a great number of pilgrims is destined to undergo quarantine at Mecca, where they run the risk of perishing by famine, and where they threaten to throw themselves upon Jeddah. According to the same project, with the Persian amendment, a smaller number of pilgrims is made to await the termination of the epidemic at Medina, where means of subsistence abound. And again, is it necessary that we should remind you that it is impossible for the latter to throw themselves into Jeddah, Jeddah being far distant? Should they

think of returning to it, they would not arrive before the termination of the interdiction, and they might be allowed to embark freely, and go where they pleased.

The pilgrims arriving at Yambo would be embarked, as we have just said, and transported to the Egyptian coast; in the event of there still being any persons among them suffering from cholera, they would be landed at Tor and Calaat-el-Moire. These two places alone would amply suffice for the number of pilgrims who would embark at Yambo. There they would be received in suitably organised lazarettos, and they might undergo their quarantine without any inconvenience. The amendment we propose allows us time to organise everything: for, besides the two months yet to elapse between this and the Courban-Bairam, we have in addition the 15 days the pilgrims would occupy in reaching Yambo.

If our proposed amendment were adopted, the project would be executed in the following manner, with such modifications as might be deemed necessary by the Conference:—

1st.—The number of members of the sanitary commission of the Hedjaz would be immediately strengthened.

2nd.—The commission, thus strengthened, would be divided into three sections; one of which would immediately proceed to Tor and Calaat-el-Moire to organise the lazarettos and encampments. The second would establish itself at Medina. The third, composed of at least three members, would form the reserve, and remain at Jeddah.

3rd.—The local authorities would employ every mode of persuasion to make the pilgrims understand that it was their interest to take the overland route. They would come to the help of the needy in the matter of the comparatively short journey between Mecca and Medina.

4th.—The section of the medical commission at Medina would prepare, in concert with the authorities on the spot, every thing necessary for provisioning and encamping the caravan on its arrival. If the caravan were to arrive with persons suffering from cholera, everything possible would be done to persuade it to remain for some days in its encampment. It would even be possible, by providing it with means of subsistence, to complete its quarantine altogether on the spot. It is understood, of course, that the medical commission would adopt all the hygienic measures necessary on such occasions before the arrival of the caravan, and would keep them in force during its stay.

5th.—Those of the pilgrims who would reach Yambo, where all suitable measures as above would be taken by the same section of the medical commission, would be sent straight to Tor and Calaat-el-Moire.

6th.—The members of the medical commission stationed at these two lazarettos would subject the arrivals to the necessary sanitary operations, or would allow them to continue their voyage, taking care, however, to keep them under observation for three whole days.

My amendment has been characterised by two members of the Committee *ad hoc* as being a combination of the disadvantages of the two projects; and I consequently expect, and am prepared for, severe criticism, which I shall be in a position to refute. After the discussion which will be raised, you will be more enlightened on the question, and better enabled to pronounce your opinion. I beg only that, during the discussion, you will not lose sight of the following points:—

1st.—That it is a physical impossibility for a multitude to remain at Mecca after the ceremonies, even for three days.

2nd.—That the same multitude can remain at Medina comfortably.

3rd.—That it is possible for the authorities to convey this multitude from Mecca to Medina. The measures required are not much; it would suffice to put them into force with circumspection and consideration, so as not to shock religious belief.

4th.—That once the multitude reaches Medina, all danger disappears, and that the port of Jeddah remains open.

5th.—That the pilgrims, who would go from Medina to Yambo, would be infinitely less numerous than those whom it would be necessary to embark at Jeddah.

6th.—That the question of embarkation at Yambo, and the placing of the pilgrims in quarantine in the lazarettos, become by my amendment very much easier of execution.

INTERNATIONAL SANITARY CONFERENCE.

Considerations urged by GENERAL MIRZA MALKOM KHAN *in support of the proposed amendment of his colleague, Dr. Sawas, Persian Delegate.*

Since the first sitting of the Conference, I have known nothing more urgent than the proposal of the French Delegates. How unhappy indeed would our situation be, if, while assembled in this place, cholera were again to invade our countries! It is, therefore, of the greatest importance that we should all employ our utmost efforts to avert such a disastrous contingency. Within the last few years Persia has been, of all countries, one of the most cruelly stricken by cholera; it is useless, therefore, to tell you that, in this Conference also, Persia will necessarily be, of all powers, one of the most anxious and eager to oppose the return of this terrible scourge.

As for the means of obtaining the result we seek, I confess that we Persians, are entirely ignorant of them. But if the principles on which your proposal of urgency is based are true, I am enabled to announce to you that I have discovered another much more rational means of obtaining the same result, and which will certainly be much more effectual

than anything that has hitherto been proposed. I propose simply the complete prohibition of the pilgrimage to Mecca; this proposition is based upon precisely the same principles as the urgent proposal you are now considering. If we can condemn the pilgrims to perish in the desert for the good of humanity, why should we not have the right of forcing them, with the same object, to stay quietly at home? If we can send ships-of-war to the ports of the Hedjaz to prevent the pilgrims from returning to the places whence they came, why should we not go a step further? Why should we not go to Mecca itself to prevent the assemblage of those more or less barbarous people who come from all parts of the world to lose their lives and property in a wild valley, and afterwards to spread a horrible calamity over the whole civilised world? It is clear that my project cannot be reproached as being more cruel and severe than the measures of your proposal. For if I sacrifice the pilgrimage, I have at any rate the satisfaction of saving the pilgrims; while your proposal, at the same time that it pretends to save the pilgrimage, pitilessly sacrifices the pilgrims. If you tell me that the restriction of the pilgrimage is contrary to the principles of Islamism, and that the Head of Islamism cannot reasonably be asked to sanction such a measure, I shall reply to you that, with your proposal, you do exactly what, in principle, you admit to be inadmissible. For to permit entrance and to prevent exit is clearly more than a restriction. I am well aware that the desert route is pointed out to us. But would it be really worthy of the intelligence of the Conference seriously to present such a route as practicable?

Well, gentlemen, examine my proposition in every way you please, and you will find that, while it offers greater security against cholera, it does not make a greater attack upon rights and liberty, nor does it create more difficulties than your urgent proposition. How is it then, gentlemen, that, in spite of the security and simplicity of my proposition, not one of you has regarded it as serious? For I am persuaded you are all agreed that the idea I have here given utterance to is altogether inadmissible. It is evident nevertheless that, if the only object you should have in view is that of repulsing cholera, my proposition should be admitted at once. What then are the considerations which cause the rejection of my proposal, in spite of the very object of your mission? And how great should be the importance of these considerations, if you can subordinate to them this grave question of preserving Europe from being again invaded by the Asiatic scourge! It is quite useless to explain here the reasons which induce you to reject my proposal, it suffices to state that these reasons exist, and that they outweigh in your own minds even the object of your Conference. Well, gentlemen, the same reasons and the same considerations which cause you to reject my proposition, ought to convince you that the urgent proposal, in the shape in which it was put forward before you, cannot receive your sanction. The measures of this proposal, attack precisely the same principles which you would wish to respect in rejecting my proposition; the only difference is that my proposition, would attack directly what these lauded urgent measures would destroy indirectly. I will be asked perhaps,

what can be destroyed in changing the route of a multitude? This is exactly the difficulty of our problem: the ideas, the manners, the doctrines, and the logic of Asia are so different from those of Europe that, in spite of all the extent and all the profundity of European science, I have never been able to understand how a European could grasp the bizarre concatenation of so many contradictory ideas and so many inconceivable prejudices which make up the social edifice of the Orientals. The one idea alone that the Mussulman sovereigns had come to an understanding with the powers of Europe to regulate the march of the pilgrims, would suffice completely to change the relations between our sovereigns and their peoples.

I beg of you then, gentlemen, to remark one thing. In submitting my observations to you, I do not in any way mean that Europe ought to sacrifice the health and the interests of her populations to respect the prejudices of Asia. If I were a dweller on the banks of the Rhine, I should have demanded, in order to preserve myself against cholera, not only the measures of your project, but even the destruction of Mecca and Medina; but I am an Oriental at the same time that I am a member of this Conference. I desire to aid in the object of the Conference, without forgetting any thing that is due to the Asiatic mind.

Thus, gentlemen, I do not pretend to divert you, for the love of our pilgrims, from the object of your noble mission; on the contrary, I exhort you firmly to adopt all the measures you may deem necessary for the security of Europe against the ravages of cholera. The only point I dare ask of you is to be always consistent with your principles. If you are occupied only with the object of your mission, then seek out the most efficacious measures without stopping at extraneous considerations. If, on the contrary, you attach sufficient importance to these considerations to place them above your mission, then I would beg your utmost attention, so that you may not indirectly, and almost unknown to yourselves, destroy what it was your desire to preserve. Now, we must not hide from ourselves that the adoption of the measures of your proposal would lead to the most unexpected complications in Eastern affairs. The most strange and fanatical interpretations would raise a tempest of hate in the Mussulman world which nothing could appease. I do not wish to appear to exaggerate the consequences of these measures, and I know perfectly well that Europe never will have any thing to fear from Asia; but is the position of the Mahomedan Governments so indifferent to the peace of the world, that Europe can allow them to be abandoned without regret to the attacks of a fanaticism, all the more violent that it has of late been repressed with so much effort by these same Mahomedan Governments, and with the object even of entering into the views of the powers of Europe.

However, admitting all this, I am far from thinking that the Conference has nothing to do in the Hedjaz. I believe, on the contrary, that it has a great deal to do in those parts, and that it has the means of doing every thing there that may be necessary to be done. For

my own part, the only difficulty that exists is in the choice of the forms the Conference should give to its measures. I am bound to state a truth here not flattering to us Asiatics, but which may serve as an excellent guide to us in our measures of application. This truth is as follows :—

The powers of Europe can obtain any thing from Asiatics, provided they know how to put their demand in a proper form ; and I am convinced that we could apply all our measures of urgency also, but with the essential condition of keeping up appearances. It is with this object alone that we have just asked you to leave the ports of Yambo and Omar open; I confess that the opening of these two ports will very slightly change the material position of our pilgrims, but their moral condition will be completely modified by this fact alone; and it is unnecessary to repeat to you that, in leaving the port of Yambo open, you in no way diminish the efficiency of your measures of urgency. The details and the practical explanations of our amendment have been furnished to you by my honorable colleague, and I confine myself to recommending them here to your serious consideration.

In submitting my observations to you, gentlemen, I am happy to be able to assure you that in this Conference you will find Persia always ready to do every thing that may depend upon her for the success of your mission. The Conference should not be unaware that the task of the Mussulman powers, under these circumstances, is excessively delicate and abounding with grave difficulties. We are firmly resolved to overcome these difficulties, and the only assistance we ask of civilized Europe is to remember that it is not within the power of any Government to destroy the prejudices of its people at will, and that, even in the midst of the enlightenment of civilisation, we often see the most firmly established powers compelled to share in a vulgar prejudice with the mass of the people.

Dated 15th March, 1866.

From—H. MERIVALE, Esq., *India Office,*

To—The Under-Secy. of State for Foreign Affairs.

I have laid before the Secretary of State for India in Council your letters noted in the margin, relative to the proceedings of the International Cholera Conference now sitting at Constantinople ; and in returning the correspondence which accompanied them, I am directed to request that you will convey to the Earl of Clarendon the thanks of Earl de Grey for the opportunity of perusing it.

Dated 9th, 10th, 12th and 13th March 1866.

With regard to the questions put in your letter of the 10th instant, I have to state that no information has reached this Office of the Indian pilgrims of this season having brought the cholera with them.

On the subject of the proposal adopted at the Conference at Constantinople that in the event of cholera breaking out this year among the pilgrims at Mecca the pilgrims shall be absolutely prohibited from leaving Jedda by sea, Lord de Grey entirely concurs in the objections to the measure stated by Lord Lyons.

Lord de Grey is of opinion that even were the Indian pilgrims exempted from its operation, there would still be great risk that the excitement to which the measure might be expected to give rise among the Mussulman population of Arabia and Turkey would extend to the Mahomedans of India, and that serious difficulty and embarrassment would thus be caused to the Indian Government.

It would, however, appear that, from the want of a suitable port to the south of Jedda, the exemption proposed to be made in favor of the Indian pilgrims would be found impracticable, and that those pilgrims would therefore be liable, under the resolution of the Conference, to the operation of the measure in its full rigour.

Any danger or difficulty, to which the Indian Government might be exposed would not fail to be greatly aggravated under these circumstances. If fanatical excitement may be expected to arise among the subjects of Mahomedan Governments from interference with their movements in connection with their pilgrimages, such a feeling is far more likely to be excited among the Mussulmans of India, who are known to be so keenly alive to the least appearance of interference with their religion or their religious observances. Any restrictions of the nature proposed would scarcely fail, therefore, to be attributed by the Indian pilgrims to a desire on the part of the Government of India to put a stop to the pilgrimage to Mecca, and the danger would be greatly increased by the opportunity which the prolonged detention of the pilgrims would afford to the Wahabees of Central Arabia and to the mutinies of the late Bengal Army who are understood to be at Jedda to obtain access to the pilgrims, and to instil feelings of suspicion into their minds.

Lord de Grey has so far confined his remarks to the public dangers to be apprehended from the proposed prohibition of the departure of the pilgrims from Arabia through the usual channel, but his Lordship directs me to add that the sufferings and inconveniences to which the Indian pilgrims would be exposed by a prolonged detention in Arabia constitute in his opinion a strong and sufficient reason against the adoption of the measure. The pilgrims for the most part belong to the poorer classes, and are entirely destitute of the means of providing for themselves during a lengthened absence from home. There can be no doubt that a large proportion of them would be unable to obtain the bare necessaries of life if kept in Arabia beyond the time anticipated by them on leaving India, and they would thus be peculiarly exposed to the attacks of disease aggravated as these would be by the crowds of pilgrims from all quarters who would be detained under similar circumstances.

On the grounds above stated, it will be gratifying to Lord de Grey if it should be found praticable to prevent the proposal of the Cholera Conference for prohibiting the return of pilgrims by sea from Jedda from being brought into operation. At all events, I am directed to express the earnest hope of His Lordship that Lord Clarendon will be able to obtain such a modification of the measure as shall confine its operation to pilgrims returning to Egypt, and that ships may be allowed to leave Jedda as usual for India and for all parts to the southward.

Dated 16th March, 1866.

From—E. HAMMOND, Esq., *Foreign Office,*

To—*The Under-Secy. of State, India Office.*

No. 307.

I am directed by the Earl of Clarendon to transmit to you, to be laid before Earl de Grey and Ripon, the accompanying copy of an instruction which has been addressed to Her Majesty's Ambassador at Paris, with reference to the evils which may ensue from the proposal of the French Delegates which was carried at the Cholera Conference held at Constantinople on the 1st instant, as set forth in the documents enclosed in Mr. Murray's letter of the 13th instant.

No. 307, dated 14th March, 1866.

From—*The* EARL OF CLARENDON, *Foreign Office,*

To—HIS EXCELLENCY THE EARL COWLEY, K. G.,

&c., &c., &c.

I transmit to your Excellency herewith a copy of a Despatch which I have received from the British Cholera Commission at Constantinople reporting the proceedings of the Conference on the 1st instant, on which occasion the proposal of the French Delegates for the immediate interruption of all maritime communications between the Arabian ports of the Red Sea and the Egyptian coast in the event of cholera breaking out this year amongst the pilgrims who are already on their way to Mecca, was carried, against the votes of the delegates of England, Russia, Turkey, and Persia.

I also enclose a copy of a Despatch from Her Majesty's Ambassador at Constantinople, adverting to the serious complications and even dangers which may arise if the Porte should be induced by the French Government to carry out the measures proposed, supposing them even to be practicable.

I have to instruct your Excellency to communicate Lord Lyons' Despatch to M. Drouyn de Lhuys, and to call his most serious and immediate attention to the evils which the proposal of the French Delegates, if carried out, is likely to cause, and your Excellency will enquire whether any instructions have been sent to the French Commissioners for mitigating the evils which appear to be inseparable from the plan proposed by them.

Dated 21st March, 1866.

From—E. HAMMOND, Esq., *Foreign Office,*

To—The Under-Secy. of State, India Office.

With reference to my letter of the 17th instant, I am directed by the Earl of Clarendon to transmit to you, for such observations as Earl de Grey and Ripon may have to offer thereupon, the accompanying further Despatches from the British Members of the Cholera Conference at Constantinople; and I am to request that the same may be returned to this Office at your early convenience.

Nos. 8, 9, and 10.

No. 8, dated 7th March, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—The EARL OF CLARENDON, K. G., &c., &c.

We have the honor to inform your Lordship that a meeting of the Conference was held on Saturday last, to consider the executive clauses of the French "*proposition d'urgence.*"

The Ottoman delegates put on record that they would not take part in the deliberations, unless it was held that they would in no way be committed thereby to the principle of the plan. This was assented to.

At the commencement of the sitting we made the same reserve as the Ottoman delegates, and at its close we requested that the fact that we had taken no part in the discussion might be recorded in the protocol.

The Austrian Political delegates and the Russian and Persian delegates abstained from voting. The three articles of the preamble to the executive clauses were adopted, and some of the preceding paragraphs modified, as *marked* upon the enclosures.

The Clauses 3, 4, 5 and 6 were altered, and Clause 8 was entirely suppressed. The words "au besoin" were inserted between the words "feraient" and "eloigner" of Clause 3, in order to make it optional with the authorities at Jeddah to permit vessels to remain in port, should their presence there occasion no disturbance, and consistently with this modification, Clause 6 was changed so that the authorities at Jeddah might allow the Indian pilgrims to embark from Jeddah itself, instead of doing so from a distant port, if they thought that this could be done without danger to the public peace.

By these alterations, the Indian pilgrims will be at liberty to depart as usual, unless there is risk of riot and of forcible seizure of the ships by the other pilgrims.

We believe that these changes were due to our previous opposition to the measure, as well as to the opinions expressed by the Dutch delegates, who although they fully supported the *fundamental* principle of the plan, voted, at the meeting of the 3rd, for modifications with regard to the Indian pilgrim ships, the Island of Java sends pilgrims to Mecca.

Clause 4 was amplified, so as to define the character and duration of the quarantine for pilgrim ships arriving in the Gulf of Suez.

Clause 5 received an addition declaring the necessity of the caravan being accompanied by medical men throughout its march, in order that trustworthy reports of the health of the pilgrims en route might be obtained.

In discussing Clause 8, an attempt was made by the Prussian delegates to recomend that the Indian passenger steamers should be liable to quarantine at some distant station below Suez; and that in case of the importation of cholera into Suez "cordons sanitaires" should be instituted there. The French delegates, interested on behalf of the "Messageries Imperiales" packet boats of the Indian seas, strongly opposed this amendment, and stated that it did not come within the scope of the "*proposition d' urgence.*" Finally, the whole clause was struck out.

We enclose for your Lordship's information two copies of the French proposal, with the amendments written in ink. We hope soon to be able to forward copies with these amendments in print.

The delegates were requested to report to their respective Governments the adoption of the "*proposition d' urgence*" as amended.

The President of the Committee of the programme of proceedings having announced that his report was ready for distribution, the Conference fixed upon Thursday, the 8th instant, for taking it into consideration.

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO MINUTE No. 6.

Measures adopted by the International Sanitary Conference, in its meetings of the 1st and 3rd March 1866, to be carried out in the event of cholera showing itself this year among the pilgrims assembled at Mecca.

1ST.—FUNDAMENTAL PRINCIPLE.

The Conference is of opinion that, in the event of cholera breaking out this year *amongst the pilgrims*, there will be occasion to interrupt temporarily, *i. e.*, while the epidemic lasts, *all maritime communication* between the Arabian ports and the Egyptian coasts, leaving the land route followed by the caravan open to the hadjis for their return to Egypt.

2ND.—SECONDARY PROPOSITION REGARDING THE EXECUTION OF THIS MEASURE.

The Conference is of opinion that the execution of the said measure would necessitate the concurrence—

1st.—Of the Ottoman Sanitary Commission sent to the Hedjaz, which would look to the sanitary condition of the pilgrims;

2nd.—Of some men-of-war for the interruption of maritime communication; and

3rd.—Of an organised surveillance of the Egyption coast to oppose any attempts at landing, in case of infraction of these rules.

This being so, the Conference estimates that the execution of the measures could be carried out in the following manner, modified, *without touching the fundamental principle of the measure,* in such manner as might be thought proper to facilitate its application:—

Article 1st.—In the event of the manifestation of cholera among the pilgrims, the members of the Ottoman Commission assisted, if need be, by other physicians deputed for the purpose, should make the fact known to the local authorities, as well as to the men-of-war stationed at Jeddah and Yambo, and should send notice of the matter to Egypt.

Article 2nd.—Acting on the declaration of the above-mentioned physicians, the authorities should proclaim the interdiction, until further orders, of all embarkation, and should invite the pilgrims bound for Egypt to take the land route.

Article 3rd.—At the same time, the men-of-war should, as occasion might rise, send away from the ports of embarkation, all steamers and sailing vessels that might be found there, and should exercise as strict surveillance as possible, with a view to prevent any clandestine departures.

Article 4th.—On the receipt of intimation of the existence of cholera amongst the pilgrims, the Egyptian authorities should prohibit the entrance of all arrivals from the Arabian coast, starting from a point to be fixed to the south of Jeddah; and should, moreover, assign to ships breaking the

rules (after having supplied them, if necessary, with provisions) a place on the Arabian coast, Tor, for instance, where they would remain in quarantine.

This quarantine should last for fifteen days, including the time occupied in making the voyage; and in the event of cholera breaking out on board, the ships should not be admitted to pratique until fifteen days after the last known case, and after as complete a disinfection as possible.

Article 5th.—As for the caravan, it would have to be stopped, according to custom, at several days' march from Suez; there it should be visited by a Medical Commission, and it should not be authorised to enter Egypt until its sanitary condition was recognised as being entirely exempt from danger. It would be well if the caravan were accompanied by sanitary physicians commissioned *ad hoc*.

Article 6th.—Regarding the pilgrims bound to India or other places beyond the Red Sea, it would be best to assign to them a particular place of embarkation several days' march to the south of Jeddah, unless the authorities should deem their embarkation at Jeddah itself to be free from danger.

Article 7th.—The interdiction of embarkation would cease fifteen days after the last case of cholera known in the Hedjaz.

The previously expressed desires of the Conference will be communicated to any body entitled to be made aware of them by the delegates of each of the Powers represented.

SALIH,

President of the Sanitary Conference.

PERA, GALATA-SERAI; *The 3rd March* 1866. } DR. NARANZI, BARON DE COLLONGUE, } *Secretaries.*

No. 9, dated 9th March, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—*The* EARL OF CLARENDON, K. G.,

&c., &c., &c.

With reference to our Protocal No. 2. Despatch No. 4 of the 23rd ultimo, we have now the honor to enclose two copies of protocal No. 2, containing the official account of what occurred at the meeting of the Cholera Conference on the 22nd ultimo.

This protocal was not ready for distribution until yesterday, and there are numerous errors in it, the typographical resources of the Porte being both scanty and imperfect.

No. 10.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—*The* EARL OF CLARENDON, K. G.,

&c., &c., &c.

The seventh meeting of the Cholera Conference took place yesterday for the purpose of taking into consideration the Report (as enclosed to your Lordship in our Despatch No. 5 of the 27th ultimo) of the Committee which had been appointed to draw up the plan of our future proceedings.

The Report was adopted with some few modifications, the most important of which was the suppression, at Dr. Goodeve's suggestion, of the words "routes à tracer aux Pèlerins" in the 10th paragraph of the 5th page.

After some discussion as to the number and composition of the Committee to be appointed to report upon the questions comprised in groups 1st and 2nd, relating to the origin and transmissibility of cholera, an amendment of Dr. Goodeve's was eventually carried, in accordance with which the Committee has been made to consist of all the medical delegates of the Conference, with the addition of the Belgian, Spanish, and French Diplomatic Delegates, whose names had been previously mentioned in one of the other combinations proposed.

It is clearly understood that the present Committee is to confine its enquiry to the questions comprised in the two first "groups," and that until these shall have been disposed of, the discussion of preventive and restrictive measures is to be suspended.

Dated 24th March, 1866.

From—E. HAMMOND, Esq., *Foreign Office,*

To—*The Under Secretary of State, India Office.*

I am directed by the Earl of Clarendon to request you will move Earl de Grey and Ripon to favor His Lordship with his opinion as to the course which the British Cholera Commissioners at Constantinople should be directed to pursue on the discussion of the questions referred to in the accompanying extract of a letter, dated the 14th March, which has this day been received from Mr. Stuart.

Extract of a letter from MR. STUART, *date Constantinople, the* 14*th March* 1866.

"There will be some troublesome questions in group 3 of the Report when it comes under discussion, and it might be worth while for you to instruct us as to what we should be on our guard against.

"As to group 4, *viz.*, the form which we are to give to the resolutions adopted, I have reason to believe that the French will endeavor to get them embodied into a draft of convention for us to submit to our respective Governments persuading us that it is only a recommendation of the Conference which consequently will not be binding on any Government which disapproves. What line should we take in that case?

"The French measures of urgency as adopted by the majority have, as you will see, been printed as adopted by the Conference, without any allusion to there having been a minority, and the signature of Salih Effendi, the President, is by way of being affixed, whereas he voted against them, and was not aware that they were being so printed. However, they are not likely to come to any thing; as, besides their being impracticable, there is not likely to be any occasion for them, now that the cholera appears to have broken out at Alexandria, before the unfortunate pilgrims can be accused of having any thing to do with it."

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO MINUTE No. 7.

Report on a Draft Programme of the labors of the Conference, drawn up in the name of a Committee composed of MM. Dr. Sotto, Dr. Monlau, Count de Lallemand, Vice-President; Dr. Goodeve, Vernoni, Mirza Malkom Khan, Dr. Mühlig, Dr. Pelikan, and Salih Effendi, President.

(*By* DR. MUHLIG, *Secretary-Reporter.*)

[This will be found at page 146.]

Dated 6th April, 1866.

From—H. MERIVALE, Esq., *India Office.*

To—The Under-Secy. of State for Foreign Affairs.

I have laid before the Secretary of State for India in Council your letter, dated 24th ultimo, requesting that His Lordship will furnish the Earl of Clarendon with his opinion as to the course to be taken by the British Delegates at the Cholera Conference at Constantinople in the discussion of certain questions which are expected to arise under groups three and four of their proceedings.

The special questions under group three, are—

1*st.*—Are there any means for destroying the seeds of cholera in India?

2*nd.*—Ought not the rule to be established that pilgrims arriving (in Arabia) from India or from any other country where cholera prevails, should always be subjected to a qua-

rantine of greater or less strictness at some settled point on the Arabian coast before being allowed to proceed to the usual place of resort of the Mecca pilgrims?

3*rd*.—Is there occasion to apply measures of quarantine to the provinces of the East Indies generally, under what circumstances and to what extent?

On the first of the above questions it is obviously impossible for Earl de Grey to give an answer without a reference to the several Governments in India; and those Governments, if referred to, would doubtless be unable to give a satisfactory answer without consultation with the principal medical authorities at the several Presidencies. Lord de Grey will be prepared, if it is desired by Lord Clarendon, to call for the opinion of the several Indian Governments; but as Dr. Goodeve is an Officer of the Indian service, he will probably be able to give opinions which will assist his colleagues in the Conference in arriving at a solution of the question more or less satisfactory, and he will also be able to communicate privately with the medical officers in India, and get, in an unofficial form, their views as to any means being available there for preventing the spread of cholera in a westerly direction.

As regards the establishment of measures of quarantine, it is, of course, open to the Turkish Government, as to all other Governments, to enforce quarantine on all ships arriving from ports where cholera prevails, and notice has lately been received through the Foreign Office (and communicated to India) that such quarantine is to be established at Jeddah. But if it is proposed to go beyond this, and to require that all ships coming from India, whether the cholera is or is not known to prevail in the ports or districts from which they sailed, are to be subjected to quarantine, Lord de Grey is of opinion that there are no sufficient reasons for such exceptional treatment. There can be no doubt that on political grounds it is most important that there should be as little interference as possible with the movements of the Mussulman population of India in connection with the Mecca pilgrimage; and therefore though Lord de Grey will not object to the Mahomedans of India being subjected to the same measures of restriction as are enforced against the natives of other countries, with the object of preventing the spread of fatal and epidemic diseases, His Lordship most strongly and earnestly deprecates the application to India of measures of special and exceptional severity.

With regard to the question under group four, *viz.*, what form shall be given to the resolutions at which the congress may arrive, it scarcely seems that the Secretary of State for India can be called on to give any opinion. All that Earl de Grey, therefore, thinks it necessary to say is that, if the resolutions are (as appears to be thought likely) put into the form of a convention, Her Majesty's Government should, in his Lordship's opinion, refuse to concur in any provisions which would carry into effect those conditions of the Conference to which he has found it necessary strongly to object, such as that among others, which involves the prohibition of all departures by sea from Jeddah so long as cholera may be known to prevail among the pilgrims in Arabia.

Dated 26th March, 1866.

From—H. MERIVALE, Esq., *India Office,*

To—The Under-Secy. of State for Foreign Affairs.

In acknowledging the receipt of your letter, dated the 21st instant, forwarding further correspondence relative to the proceedings of the Cholera Conference at Constantinople, I am directed to state for the information of the Earl of Clarendon, that the only observation which Earl de Grey has to make on the correspondence is that the modifications made by the Conference in the scheme of the French Delegates for prohibiting the embarkation of pilgrims at Jeddah during the existence of cholera on that coast appear to him to be practically unimportant, and to have failed to mitigate the objections which he entertains to the proposed measure as expressed in my letter of the 15th instant.

The enclosures in your letter are returned in accordance with your request.

Dated 23rd April, 1866.

From—E. HAMMOND, Esq., *Foreign Office,*

To—The Under-Secretary of State, India Office.

With reference to your letters of the 15th and 26th ultimo, I am directed by the Earl of Clarendon to transmit to you, for the information of Earl de Grey and Ripon, the accompanying copy of a despatch from Her Majesty's Ambassador at Constantinople, reporting his conversation with Aali Pacha on the subject of the proceedings of the Cholera Conference.

No. 126, dated 11th April, 1866.

From—LORD LYONS, *Constantinople,*

To—The EARL OF CLARENDON, K. G.,

&c., &c., &c.

With reference to your Lordship's Despatches No. 97 of the 22nd ultimo, and No. 115 of the 29th ultimo, I have the honor to inform your Lordship that, on the 2nd instant, I called the attention of Aali Pacha verbally to the very serious objections entertained by Her Majesty's Government to the proposal adopted by the Cholera Conference, at the instance of the French Delegate, for the interruption of maritime communication between the Arabian ports of the Red Sea and the Egyptian coast.

Aali Pacha said that this proposal appeared to him still more open to objection than it did to Her Majesty's Government; that, in fact, the Porte considered that it could not be carried into execution. The Ottoman Government felt, indeed, the responsibility which must fall upon it if the cholera should break out among the pilgrims, and spread from them to Europe; it was making enquiries with a view to devising practical measures to be adopted in case of need, but it could not regard the measures proposed by the French Delegate as practical.

Aali Pacha concluded by promising not to take any steps in the matter without consulting me.

Dated 28th April, 1866.

From—E HAMMOND, Esq., *Foreign Office,*

To—*The Under-Secretary of State, India Office.*

With reference to your letters of the 26th and 15th ultimo, I am directed by the Earl of Clarendon to transmit to you, herewith, a copy of a despatch from Her Majesty's Ambassador at Paris, enclosing a copy of a note verbale, which Monsieur Drouyn de Lhuys has placed in His Excellency's hands containing a reply to the representation which Lord Cowley was instructed to make to him with regard to the proposal of the French Delegates to the Sanitary Conference at Constantinople, that, in the event of cholera breaking out this year among the Pilgrims at Mecca, they should be prohibited from leaving Jeddah by sea; and I have to request that, in laying these papers before Earl de Grey and Ripon, you will move him to cause Lord Clarendon to be furnished, at as early a moment as possible, with any observations which he may have to make thereupon.

Earl Cowley, No. 536.

No. 536, dated 27th April, 1866.

From—LORD COWLEY, *Paris,*

To—*The* EARL OF CLARENDON, K. G.,

&c., &c., &c.

With reference to your Lordship's Despatches No. 307, No. 319, and No. 387 of the 14th, 17th and 28th ultimo, instructing me to call the immediate and serious attention of the Imperial Government to the evils which it was anticipated would result from the proposal of the French Delegates to the Sanitary Conference at Constantinople, that, in the event of cholera breaking out this year among the pilgrims at Mecca, the pilgrims should be absolutely prohibited from leaving

Jeddah by sea, I have the honor to state that I embodied the observations of your Lordship or of Lord de Grey almost textually in a note verbale, which I placed in M. Drouyn de Lhuys' hands on the 6th instant. The note verbale, of which I have now the honor to enclose a copy, was given to me by M. Drouyn de Lhuys this morning. His Excellency, as your Lordship will perceive, states that the objection of Lord de Grey would be of undoubted importance, if the proposal made to the Conference at Constantinople had really been *absolutely* to prohibit the embarkation of pilgrims at Jeddah. Such however was not the case, in so far at least as pilgrims from beyond the Red Sea were concerned. The Conference, being anxious to guard against the possibility of such pilgrims being detained on land, had expressly stated that, should no other port suitable for the purpose be found on the Arabian coast, permission should be given to them to embark at Jeddah, unless opposition were made by the local authorities.

Viewed in this light, His Excellency does not consider that the resolution adopted by the Conference is of a nature to cause apprehension to Her Majesty's Government; and he adds that the delegates from Holland, the interests of which country are identical with those of England appeared fully to concur in it.

His Excellency Earl Cowley has explained to me the anxiety felt by Her Britannic Majesty's Secretary of State for India in regard to the practical execution of the measures recommended by the International Sanitary Conference of Constantinople in the event of the recurrence of cholera this year at Mecca. The prohibition of the embarkation of the pilgrims at Jeddah, even as mitigated with regard to those coming from countries lying on the further side of the Red Sea, by giving them liberty to embark at some place in the Red Sea to the south of that town, appears to Lord de Grey to be likely to cause great discontent amongst the Indian pilgrims, and consequently to give rise to serious difficulties to the Government of that country. The concession made to them being, in his opinion, illusory, because there does not exist on the coasts indicated any accessible or convenient port, the Indian pilgrims would in reality have no alternative to adopt but that of waiting in Arabia for the re-opening of maritime communications. Now this sort of detention, in the midst of a fanatical and hostile population, could not but inspire them with sentiments of suspicion and disaffection towards the Government to which they are subject, and which they would not fail to make responsible for the restrictions introduced in the movement of the pilgrimage.

Lord de Grey's objections would have been of incontestable value if the Conference had proposed, in effect, *absolutely* to prohibit the embarkation of the hadjis at Jeddah; but it has not done so, at least in so far as concerns pilgrims from countries situated beyond the Red Sea. In regard to these, the Conference has altogether dispelled the idea that it is possible to retain them on land; and anticipating that it

might not be possible to find any other town on the Arabian coast adapted to their embarkation, it expressly allowed them the privilege of embarking at Jeddah itself, if the local authorities should not consider it inconvenient.

In these terms, the resolution adopted by the Conference does not seem to be of a nature to cause apprehensions to the Government of Her Britannic Majesty, and it may be added that it seems to have afforded entire satisfaction to the delegates from the Netherlands, whose interests in this question are the same as those of England.

PARIS, *the 26th April* 1866.

Dated 30th April, 1866.

From—H. MERIVALE, Esq., *India Office,*

To—The Under-Secretary of State for Foreign Affairs.

I have laid before the Secretary of State for India in Council your letter, dated 28th instant, forwarding a copy of a Despatch from Her Majesty's Ambassador at Paris, with the accompanying note verbale from M. Drouyn de Lhuys, on the subject of the objections stated by Earl de Grey to the proposal of the Cholera Conference at Constantinople, that, in the event of cholera breaking out this year among the pilgrims at Mecca, the return of pilgrims by sea from Jeddah should be prohibited.

In reply, I am directed to state, with reference to the remarks of M. Drouyn de Lhuys, that Lord de Grey was fully aware that it was not intended that Indian pilgrims should be prohibited absolutely from returning to their own country by sea from Arabia in the event of the proposed measure being brought into general operation. It appeared to His Lordship, however, that the provisos by which it was proposed to meet the case of these pilgrims are not such as are likely to prove of any value in practice. In the first place, it is believed that there is no suitable port within a practicable distance to the south of Jeddah where the embarkation of Indian pilgrims can be effected, and secondly, Lord de Grey believes that such difficulties would attend any arrangements for the embarkation at Jeddah of the Indian pilgrims, should the pilgrims from Egypt be prohibited from leaving Arabia by sea, that the Turkish Government would not be likely to give their voluntary consent to any such difference of treatment as is contemplated by the proviso in favor of the pilgrims from India.

It was on these grounds that Lord de Grey formed the opinion, communicated to you in my letter of the 26th March, that the modifications in the scheme of the Conference before its final adoption were practically unimportant; and I am now directed to state, for the information of the Earl of Clarendon, that His Lordship's objections to

the general measure as recommended by the Conference remain unaffected by what has since been said; and to repeat the request that, should the measure be brought into operation generally, an exemption, in direct and explicit terms, may be made in favor of Indian pilgrims.

Dated 3rd December, 1866.

From—E. HAMMOND, Esq., *Foreign Office,*

To—*The Under-Secretary of State, India Office.*

I am directed by Lord Stanley to transmit to you, to be laid before Lord Cranborne, a copy of a Report which has been addressed to Her Majesty's Ambassador at Constantinople by Dr. Dickson, relative to precautionary measures against cholera which the Egyptian Government propose to adopt on the occasion of the next pilgrimage to Mecca.

Dated 21st November, 1866.

From—G. DICKSON, Esq., *Constantinople,*

To—*His Excellency* LORD LYONS, G. C. B.

&c., &c., &c.

I have the honor to inform your Lordship that the Board of Health has received a report from Dr. Binsenstein, its Agent at Alexandria, dated the 14th instant, stating that, in expectation of the approaching pilgrimage to Mecca, the Egyptian Board of Health had drawn up a project to be carried out at the time of this pilgrimage, consisting of the following measures :—

1.—Pilgrim ships arriving from India in the Red Sea are to stop at Moka and undergo an interrogatory there.

2.—Vessels without a bill of health, and those upon which cases of cholera have occurred, will be sent to Massowah to perform 15 days' quarantine.

3.—Vessels which arrive at Jeddah or at any other port of the Hedjaz, without having previously stopped at Moka to show their bills of health, will be sent to Massowah to perform quarantine.

4.—Should cholera break out in the Hedjaz, all communications by sea between that province and Egypt shall be strictly prohibited.

5.—Caravans returning from the Hedjaz will undergo their quarantine at Sweysch, where vast lazarettos are to be established.

6.—Arrivals from the Hedjaz with a clear bill will have to perform a quarantine of observation of five days either at Tor or at Kosseir.

A Commission composed of members of the Board had been named to examine this project, and their report upon it will be submitted for approval to the Viceroy.

Dated 14th December, 1866.

From—H. MERIVALE, Esq., *India Office,*

To—The Under Secretary of State for Foreign Affairs.

I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter, dated the 3rd instant, forwarding a copy of a report from Dr. Dickson, relative to the precautionary measures to be taken against cholera on occasion of the approaching pilgrimage to Mecca, which had been submitted for the consideration of the Egyptian Government; and, in reply, I am directed to request that Lord Stanley may be moved to communicate to Viscount Cranborne, whenever it may be received at the Foreign Office, the project which may eventually be approved by the Egyptian Government, in order that the Government of India may be informed, as soon as possible, of the measures of inspection and quarantine which will be enforced in the case of Indian pilgrim ships.

Dated 24th March, 1866.

From—E. HAMMOND, ESQ., *Foreign Office,*

To—The Under Secretary of State for India.

I am directed by the Earl of Clarendon to transmit to you, to be laid before Her Majesty's Secretary of State for India, the accompanying further reports of the proceedings of the Cholera Commissioners at Constantinople, and to request that these papers may be returned to this Office at Earl de Grey and Rippon's earliest convenience.

No. 89, dated 14th March, 1866.

From—LORD LYONS, *Constantinople,*

To—*The Right Hon'ble* EARL OF CLARENDON, K. G.,

&c., *&c.*, *&c.*

I have the honor to forward herewith two despatches* addressed to your Lordship, which have been sent to me under flying seal by the British Commissioners to the Cholera Conference, in which their latest proceedings are reported.

No. 11.
No. 12.

No. 11, dated 13th March, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—*The Right Hon'ble* EARL OF CLARENDON, K. G.

&c., *&c.*, *&c.*,

We have the honor to enclose herewith copies of Protocol No. 3, containing a summary of the proceedings of the Cholera Conference at its sitting of the 26th ultimo, together with copies of the several annexes (as marked in the margin), belonging thereto.

Protocol No. 3.—(Sitting of February 26).
Annex No. 1.—Report of Committee on French proposal.
Annex No. 2.—Amendment of Persian Delegate.
Annex No. 3.—Amendment of Ottoman Delegate.

We have also the honor to enclose correct printed copies of the amended French proposal adopted by the majority of the Conference at the sittings of the 1st and 3rd instant, in contemplation of cholera breaking out amongst the pilgrims who have gone this year to Mecca; the copy forwarded in our despatch No. 8 of the 7th instant having been hastily prepared by us for your Lordship's earlier information.

Amended French proposal
Adopted by majority of Conference, (March 1st and 3rd).

No. 3.

INTERNATIONAL SANITARY CONFERENCE.

Meeting of the 26th February 1866.

HIS EXCELLENCY SALIH EFFENDI,—*Presiding.*

The International Sanitary Conference held its third Meeting on the 26th February 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul General, Chargéd' Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

The Hon. M. W. Stuart, Secretary to Her Britannic Majesty's Embassy.

Dr. E. Goodeve, Surgeon Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to His Hellenic Majesty's Legation.

For Italy:

M. Alexandre Vernoni, Chief Interpreter to the Italian Legation.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor of the Dutch Legation.

For Persia:

Mirza Malkom Khan, Aide-de-Camp General to his Majesty the Shah, Councillor of the Persian Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health, Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Charge d' Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

M. H. de Krause, Secretary to the Prussian Legation.

Dr. Muhlig, Physician to the Legation, Chief Physician of the Hospital of the Ottoman Marine.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, and Secretary to the Swedish Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Council of Health at Constantinople.

The Meeting was opened at 1 P. M.

Dr. Naranzi, one of the Secretaries of the Conference, read the minutes of the last meeting.

Referring to the part of the minutes where his observation in reply to Mr. Stuart was recorded, *viz.*, that the circular of His Excellency the Minister for Foreign Affairs in France had foreseen the necessity of adopting precautionary measures in regard to pilgrims already on their way to Mecca, Count de Lallemand explained that the phrase to which he had wished to allude, and which, in fact, was not contained in the said circular, existed in the instructions which had been conveyed to him. Count de Lallemand added that these instructions were not secret; and if the Conference desired it, he was ready to disclose them.

Dr. Bartoletti, as Secretary-Reporter of the Committee, appointed to consider the French proposition, remarked that it would seem to be inferred from the minutes that it was owing to him that that Committee had been unable to present its report at the second sitting of the Conference. Dr. Bartoletti thought it right to remark that his work might have been finished in time, but that he had to wait for the information promised by his Government, with which it was indispensably necessary that the Committee should be acquainted, in order to be able to decide on the merits of the Ottoman counter-proposition.

Some other members of the Conference having also offered their observations on certain passages of the minutes, the Secretary replied that the necessary corrections, which were only in matters of detail, would be made by him before the minutes were printed.

The minutes were then adopted by the Conference, which cordially agreed with Dr. Sawas in congratulating Dr. Naranzi on the excellent manner in which he had drawn them up.

Dr. Bartoletti then read the report (Annexure No. 1 to the present minutes) of the Committee appointed to examine the proposition of the French Delegates, and the counter-proposition, or amendment, put forward by him on the part of his Government. From the first of these documents it appeared that the Committee, which was composed of MM. Vetsera, Fauvel, Stuart, Professor Bosi, Sawas, Lenz, and Bartoletti, was unable to agree in opinion. Three of its members voted for the adoption of the principle of the French proposition, *viz.*, M. Vetsera, Dr. Fauvel and Professor Bosi; and three voted against, *viz.*, Drs. Sawas, Lenz, and Bartoletti; Mr. Stewart declining to vote. As for the Ottoman counter-proposition, the text of which is annexed to Dr. Bartoletti's report and which consists substantially in the embarkation of the pilgrims in groups and their dissemination in lazarettos to be prepared on various points of the coast of the Red Sea, it was voted only by its mover. Lastly, an amendment proposed by Dr. Sawas obtained only his vote and that of Dr. Lenz.

Dr. Sawas spoke after Dr. Bartoletti, and read his proposed amendment, (Annexure No. 2 of the present minutes). The Persian Delegate proposed, while adopting the principle of the interdiction of maritime communications, to make an exception in favor of the port of Yambo, which would remain open to pilgrims. This combination seemed to him

to possess the double advantage of offering sufficient guarantees for the public health, while, on the other hand, it saved the pilgrims from dangers of every kind to which they would be exposed if they were forced to take the desert route, or to remain at Mecca after the ceremonies of the pilgrimage.

After this had been read, His Excellency Salih Effendi submitted a fresh project or amendment to the Conference (Annexure No. 3 of the present minutes), in which he developed Dr. Bartoletti's amendment, completing the measures proposed by the latter by the addition of more physicians to the Ottoman Medical Commission sent to the Hedjaz, and insisting on the serious inconveniances which, it appeared to the Turkish Delegates, would result in many points of view from the adoption of the French proposition.

Having read this, Salih Effendi followed it up with some reflections on the subject of the Indian pilgrims, whom the French Delegates would retain like the others in case of cholera, admitting at the same time the possibility of assigning them some port to the south of Jeddah where they might embark. His Excellency would like to know what would be the use of preventing their departure. To avoid over-crowding? If so, it would be all the more advantageous, in his opinion, to put them on board English steamers, so that they might the sooner get back to their respective homes, inasmuch as it was not certain that a port could be found to the south of Jeddah; and, again, if such a safe place existed, that it would be found to be connected with that town by a practicable road. In regard to the increase of the number of members of the Medical Commission of the Hedjaz, the Government of H. I. M. the Sultan was ready to take measures accordingly, and His Excellency Saliah Effendi consequently begged the honorable Conference to fix the number of additional physicians it would be necessary to add to the Commission, as also to prepare, if necessary, the instructions required to complete those with which it was already furnished. His Excellency concluded by begging his colleagues to take the double proposition into their serious consideration, so as to be able at their next meeting to decide on its merits.

The Conference decided, on the motion of Dr. Lenz, that the documents just read should be printed and added to the minutes.

Dr. Fauvel was then called upon to speak with regard to the French proposition. Before entering into its details, he said he thought it would be well, with the view of facilitating the discussion, that any members of the Conference, still having amendments or counter-propositions to bring forward, should do so at once.

This remark gave rise to some observations, and some members said it was contrary to parliamentary usage. Dr. Fauvel then explained that he only meant to speak of amendments, or counter-propositions, which their authors must have prepared in advance; and that it was evident

that the adoption of his proposal would not in any way affect the incontestable right of every member of the Conference to bring forward any amendment he pleased during the course of the discussion.

This explanation given, Dr. Fauvel's motion was put to the Conference. No new amendment was brought forward.

Professor Bosi also demanded, with the view of assisting the progress of the debates, that it should be decided, as was the custom in certain assemblies, that only such amendments should be taken into consideration as were previously supported by a certain number of members to be fixed by the Conference. Several delegates opposed this proposition; and, after a conversation, in which Dr. Sawas, Chevalier Pinto de Soveral, Dr. Goodeve, M. Stenersen, and Count de Lallemand took part, the Conference voted in favor of complete liberty during the discussion. Every Member would be free to introduce any amendment or counter-proposition he thought proper.

Dr. Fauvel, having been invited to speak upon this urgent proposition, declared that the very extended developments upon which he saw he would be forced to enter, would take up some time; and, considering the advanced hour, he preferred to abandon his right to speak for the present in favor of Dr. Pelikan, who was named to speak after him.

Dr. Pelikan read a note which mainly contested the urgency of the measures proposed by the French Delegates. The Russian Delegate relied, with regard to this point, upon the fact that the satistical information possessed by science since 1817 proved that the epidemic, always starting from India, had never followed the same route to England for two years in succession, for the reason, doubtless, that *the epidemic development of cholera could not be explained merely by its transmissibility*. The epidemic of 1865 had, moreover, left a mass of choleraic germs in Europe, and these germs, developing themselves in the spring, would constitute a danger much more to be dreaded than the conjectural importation of the Indian scorge by means of the pilgrimage. Dr. Pelikan thought, for these reasons, that the French proposition could not but gain by being deprived of the character of urgency which had been attached to it. It would then certainly be less open to the objections which had been urged against it, and which, for the most part, applied to the difficulty of practically applying the proposed measures, and also to the necessity of completing them by such precise and local information as was not yet available.

Mirza Malkom Khan then read a memorandum, arguing in behalf of the adoption of the amendment proposed by his honorable colleague Dr. Sawas, demanding, however, that the exception made by him in favor of Yambo should be extended to the port of Omar. It would be much better, in his opinion, to suppress the pilgrimage altogether, and compel the pilgrims to stay quietly at home rather than to prohibit altogether their use of the sea route; or, in other words, to condemn them, in the

name of humanity, to perish of famine and misery in the desert. The Persian Delegate believed that the French proposition, not to speak of its other inconveniences, would have that of raising tempests of heat in the Mussulman world, and of creating the most serious difficulties for Oriental Governments. The ideas, the manners, the doctrines, and the logic of Asia were so different from those of Europe, that the mere idea, that Mahomedan sovereigns had come to an understanding with European powers to regulate the route and progress of the pilgrims, would suffice completely to change existing relations between the sovereigns and their subjects, and lay them open to the attacks of a fanaticism all the more violent because so much had been lately done with a view to suppress it.

The powers of Europe, continued Mirza Malkom Khan, may obtain anything from the people of Asia, provided they know how to save appearances, and put their requests in a shape rendering them admissible, and for this reason, it is necessary to leave the ports of Yambo and Oma open. The measure proposed by the French Delegates would lose nothing of its efficacy by this, and thus any attack upon religious feelings, which it is always dangerous to oppose, would be avoided. So far as Persia is concerned she is ready to do all she can to ensure the success of the mission confided to the Conference; but the Conference should not forget that, under these circumstances, the task of the Mahomedan powers is beset with difficulties and dangers, and that it is not given to any Government, even in the most civilised countries, to annihilate at pleasure the prejudices of its people.

After this discourse, Dr. Monlau asked and obtained leave to speak to order. The Spanish Delegate thought that, considering the numerous propositions and counter-propositions which had been brought forward, it would be necessary to decide as to the order in which they should be discussed. After having heard Dr. Sawas, Dr. Monlau, Count de Lallemand, de Krause, Segovia, and Dr. Sotto, the Conference decided that the discussion was open on the propositions of the French Delegates, and, also, by a majority of seventeen votes against three, that the next meeting should take place the next day, Tuesday, the 27th instant, at 1 P. M.

Count de Lallemand stated, immediately after this vote, that the Committee, to which the duty of drawing up a draft programme had been assigned, had finished its labors, that its report was already in the press, and consequently at the immediate disposal of the Conference.

In reply to a request then made by M. Segovia, His Excellency Salih Effendi intimated that he would take the necessary steps to have hydrographic charts of the Red Sea placed at the disposal of the Conference.

The meeting terminated at 5 P. M.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE NO. 1 TO THE MINUTES OF THE 3RD MEETING.

Report of the Committee appointed to examine the proposition put forward by the Delegates of the French Government, regarding the measures to be adopted in the event of cholera showing itself this year among the pilgrims assembled at Mecca.

MEMBERS OF THE COMMITTEE.

HON. MR. STUART, *President.*

M. VETSERA.	DR. SAWAS.
DR. FAUVEL.	DR. LENZ.
PROFESSOR BOSI.	DR. BARTOLETTI, *Secretary-Reporter.*

GENTLEMEN,—You have very rightly, from your first meeting, devoted your attention to an urgent question, worthy of being taken before anything else, into serious consideration.

Such is the opinion of the majority of the Committee on the measures to be adopted in the event of cholera breaking out this year among the pilgrims assembled at Mecca. These measures have been proposed to you by the French Delegates.

Acting in a spirit of general interest, you have named a Committee of seven members, charged with the examination of this important question.

Your Committee now presents its report to you. It could have wished to be able to announce a result arrived at by unanimous consent, and to propose a homogeneous solution one way or the other. But, notwithstanding all the efforts it has made in four long sittings, in which everything was discussed and analysed, it has not been able to make the divergent opinions of its members concur upon one single point.

The question of opportunity and competence was first of all raised: the question whether the Committee could, without judging as to the future, be called upon to propose measures of quarantine before the principle of the transmissibility of cholera was affirmed by the Conference; and whether, in consequence, it was not necessary beforehand to obtain the consent of the different Governments.

To this first objection, it was replied that the very assemblage of the Conference implied the recognition of the principle of transmissibility, and the majority of the Committee, by six votes to one, decided in this sense. But it is not the less to be regretted that, following on this solution, one of its members Mr. Stuart thought himself bound to confine himself to a system of abstention which deprived the Committee of an important vote in all the other questions successively brought under discussion.

The proposition of the French Delegates consists principally, as you are aware, gentlemen, *in the prohibition, during the epidemic of all maritime communication between the Arabian ports and the Egyptian sea board,* leaving the desert route open to the pilgrims for their return to Egypt.

In other words, as said in the proposition, the pilgrims would be subjected to quarantine, either on the spot for those who might prefer to await the termination of the epidemic in the Hedjaz, or in the desert for the larger number who would follow the caravan. We pass over the accessory details of the proposition, for the greater part of the objections were directed against its very essence.

Let us state in the first place that the Committee unanimously recognised the gravity of the threatened danger, if unhappily cholera were to show itself again this year among the pilgrims at Mecca, and that it admitted, with one exception, the necessity of opposing an efficacious barrier to a fresh invasion of the scourge. Let us note also that the measure proposed by the French Delegates was admitted to be in principle the surest means of success in face of the danger, and was only opposed in the method of its application. It was, in fact, only in regard to its execution that it was found not to be in accord with the sentiments of humanity which should dictate the measures to be imposed on the pilgrims, and it was there that the difficulties arose.

Thus, serious fears were expressed of leaving the thousands of pilgrims to wait at Mecca for the termination of the epidemic unprovided with water and provisions, and the impossibility was urged of providing, under existing circumstances, means of trasport for the pilgrims who would have to follow the caravan, the practice of forming grent caravans having been abandoned, even among the Arabs, since the introduction of steam navigation in the Red Sea; and great stress was specially laid on the dangers to which the population of Jeddah would be exposed, if the pilgrims massed together at Mecca, and a prey to the epidemic and to famine, should crowd into that town to seek for means of subsistence by pillage, or with the object of embarking.

These apprehensions, maintained persistently on the one side, were energetically opposed on the other as being illusory and untenable. In fact, it was said, what could be more erroneous than to believe that a town like Mecca, which, as has sometimes been seen, can feed as many as 80,000 pilgrims, would fail to supply provisions, because it had to nourish a comparatively small number of pilgrims for a rather longer time? And as with provisions, it was said again, so there could be no want of water which, if not of the best quality, would not the less suffice for the requirements of a much smaller number of pilgrims this year than was supposed. Moreover, it was added, nothing was easier than to throw provisions into Mecca *viâ* Jeddah, if the Arabs, who supply it in abundance during the pilgrimage, should happen (which is impossible) not to do so this year. In reply to the question about means of transport, it was said that it was enough to know that part of the wealth of the country consisted in camels in order to allay all apprehensions of the pilgrims not having modes of conveyance. It would only be necessary to give notice to cause them to arrive in thousands, and in this case, there would be no want of speculators ready to supply them. If then, it was concluded, provisions and means of transport were not wanting, where would be the danger of the collisions apprehended at Jeddah? This danger, on the contrary, would become real if the pilgrims were allowed to reckon upon finding ships there, which they would not be able to do if maritime communications were suspended.

It was under these circumstances, everybody holding to his own convictions, that the Turkish Delegate, a member of the Committee, proposed the substitution of a methodical system of embarkation for the absolute prohibition of maritime communication. The pilgrims would take passage in batches on steamboats exclusively reserved for this service, and would be placed in lazarettos conveniently situated on different points of the Egyptian sea-board of the Red Sea, such as Tor, Cosseir, and others, where they might go through a strict quarantine. Entire liberty would be allowed to those pilgrims who might choose to follow the desert route, in order to avoid the quarantine (see the Annexure to the present Report).

This amendment or proposition was met on one side with sustained opposition as being diametrically opposed to the proposition of the French Delegates; while on the other, it did not meet with the support that might have been expected even from those who would not adopt the French proposition.

The Delegate of the French Government maintained that the system proposed was illusory, because the lazarettos thus improvised offered no guarantee of security; that it was cruel to the pilgrims, because it would be difficult to feed them at Mecca; that it was perilous to the place of embarkation, on account of the collisions which might ensue, and all the more perilous, because, according to the Ottoman project, of the considerable time which would be necessary to get the pilgrims away. All these measures, he said, which were so many sacrifices for the pilgrims, would be powerless to save the country from an invasion of cholera. He reserved to himself the right of developing this argument before the Conference.

Another member of the Committee objected to the small security which was offered against the importation of cholera from such lazarettos as were proposed by the Delegate of the Porte.

The Persian Delegate put forward another amendment, essentially different from the above. He proposed to maintain the interdiction of maritime communication so far as Jeddah was concerned, and to proclaim the desert route as the only way by which the pilgrims would be allowed to return. The caravan would thus proceed as far as Medina whence it would go to Yambo, where the pilgrims would be permitted to embark for Egypt. In the event of cholera still existing among them, they would be obliged to undergo quarantine in the lazarettos organized on the Egyptian sea-board in accordance with the plan proposed by the Ottoman Delegate.

This second amendment was considered by two members as uniting to all the disadvantages attributed to the French project, those of the Ottoman proposition, that is to say, it offered neither comfort to the pilgrims, nor security against the propagation of cholera in Egypt.

After a long discussion, the various propositions were put to the vote.

The principle of the proposition of the French Delegates obtained three votes in its favor, and three against, one member declining to vote.

The amendment of the Turkish Delegate was rejected by five votes to one; one member declining to vote.

The amendment of the Persian Delegate was supported by only two votes against four, one member declining to vote.

Gentlemen, the Committee, as we said at the commencement of this Report, examined the project of the French Delegates, and the two proposed amendments, with equal attention and interest. It entered lengthily into the discussion of the question of provisions, water, and the means of transport, the want of which might have placed the greatest obstacles in the way of the return of the caravan through the desert. But the explanations afforded on either side did not terminate in the desirable result of a mutual understanding, and every member retained his own convictions, although they were all agreed, with one exception, on the necessity of taking immediate measures against the imminent danger of a fresh invasion of cholera.

We hope, nevertheless, that the Conference, appreciating the humane interest called out on every side, and which seems to have been the sole and only cause of discord in the Committee, will pronounce its verdict with the authority appertaining to it.

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO THE REPORT OF THE COMMITTEE.

Amendment submitted by DR. BARTOLETTI *to the Committee appointed to examine the proposition of the French Delegates.*

GENTLEMEN,—Permit me to remind you of the apprehensions that have been expressed in the Committee on the subject of the want of provisions, water, and means of transport, and of all the cosequences resulting thereupon, with regard to the caravan of the pilgrims, if it were obliged to take the desert route to Egypt. I shall not return to the details of this question, which have been so frequently developed and discussed; but these apprehensions, which have been confirmed by a communication, dated the 19th February, in my possession, have strengthened the opinion that the absolute interdiction of the sea-route might prove fatal to the pilgrims in Mecca, where they would be forced to await the termination of the epidemic, as well as in the journey through the desert for those who might take it.

The question was also raised of the dangers that would be incurred by the population of Jeddah, if the pilgrims, decimated by disease and abandoned to famine and despair, were to take it into their heads to make an irruption into that town for the purpose of procuring provisions by pillage, or embarking there by violence.

These powerful considerations, urged by some, and energetically combated by others, have induced great hesitation in the minds of many members of the Committee called upon to give counsel on the proposition of the French Delegates. It was in the face of these difficulties that I

proposed to you to obviate them by abandoning the absolute interdiction of the sea-route, and by adopting a series of measures which you have called upon me to develope to-day. I have made haste, gentlemen, to comply with your wishes, for it is a matter of urgent necessity to lay down the premises of the Report which we have to present to the Conference.

I shall endeavour to classify the measures to be adopted in three series, so as to impart as much clearness as possible to the expression of my ideas. I intend, therefore, to propose measures applicable to the departure a methodical regulation of the transport by sea, quarantines, and everything connected with the place of arrival.

In regard to the first point, the measures would consist—

1*st.*—In increasing the number of members of the Ottoman Commission of the Hedjaz, whose principal sphere of operations would be at Jeddah for the whole time during which the embarkation of the pilgrims would continue.

2*nd.*—In aiding the Commission by the efficacious concurrence of the local authorities who would furnish it with any assistance of which it might stand in need, for the regulation of the departure of the pilgrims in accordance with the instructions given to it by the Council of Health, and which might be added to as thought proper by the Conference.

The measures applicable to the place of departure being thus laid down, I pass to the measures to be adopted at the places of arrival, and then proceed, finally, to the conditions of the transport of the pilgrims on steamboats.

To arrive at the end we desire to obtain from the measures applicable to arrival, that is, the greatest amount of security against the invasion of cholera, I think it would be necessary—

1*st.*—To improvise at once, having regard to the urgent nature of the matter, several lazarettos, composed of barracks and tents, on different points of the Egyptian coast of the Red Sea. These lazarettos should be situated at points of easy access, strictly isolated, and provided with water in sufficient quantity to satisfy the necessities of a great mass of men assembled together. They should be situated at great distances from each other, and, as far as possible, from any inhabited place. Besides Tor, which is known to be adapted to the institution of a quaratine of this sort, I believe I am able to propose, on the African coast, a place in the neighbourhood of Cosseir, which would facilitate the return to their homes of a large proportion of the pilgrims, and another place on the Arabian coast at the entrance of the Gulf of Akaba, such as Kalaat-el-Moir, a place remarkable for the excellence of its pasturage and the good quality of its water. There might be, perhaps, a fourth place to be chosen, but I am unable to decide in regard to the spot from want of information. The pilgrims from Nubia would proceed to Souakin and Massowah, where there might also be lazarettos expressly established for them. However, this question of the localities to be fixed upon is one which must be studied well before being brought forward in a sure and definite manner. And, in order to be able to arrive at an exact knowledge of the localities to be chosen, a telegram has been despatched to the Egyptian Government asking for the necessary information, and we trust soon

to be able to communicate the answer to you. The lazarettos established—lazarettos, it should be well understood, consisting of sheds and tents,—it would rest with the Ottoman Government, acting in concert with that of Egypt, to provide the means of subsistence for the persons in quarantine, and to employ a number of persons in the lazarettos as well as to provide them with the military force necessary for the maintenance of order and discipline among the pilgrims.

It now remains to propose to you the manner of carrying out the transport of the pilgrims from Jeddah, the place of embarkation, to the various quarantine. Last year there were 17,000 pilgrims who returned *viâ* Suez; and assuming a figure of 16,000, which will not probably be attained this year, each of the four lazarettos would receive 4,000. Eight steamboats might be appointed to make four voyages each, having 500 pilgrims on board at a time. This number should not be exceeded, not only with a view to avoid over-crowding on board, but also to allow time to the preceding batches to finish their quarantine and leave the lazarettos, which the succeeding batches would find at there disposal on their arrival. In this manner the great crowding together of the pilgrims, which is so much to be dreaded during an epidemic, need not be feared, and their victualling would be all the easier. In other words, the transport of the pilgrims would be effected progressively and in batches. By this combination the police on land and sea would be carried out by the Ottoman and Egyptian forces, and the Porte would assume the duty of settling with Egypt the question of the supply of provisions so as not to allow the persons in quarantine to want for anything.

I would ask you, gentlemen, to take particular notice that this is not a counter-proposition that we mean to bring forward, but simply a modification of that which the Committee has been appointed to examine. We do not propose to substitute the sea-route for that of the desert, but to leave the pilgrims at liberty to embark on board ship, or to perform the journey in a caravan, warning them of the difficulties with which they may be beset in adopting the system opposed to the sea-voyage. If this point were distinctly understood by the pilgrims, it would have the effect of diminishing the number of departures by sea in proportion to the number of pilgrims who might freely elect to follow the desert route.

INTERNATIONAL SANITARY CONFERENCE.

2ND ANNEXURE TO MINUTE No. 3.

Proposed amendment of the urgent proposition of the French Delegates presented by Dr. Sawas, Persian Delegates.

[This will be found at page 161.]

INTERNATIONAL SANITARY CONFERENCE.

3RD ANNEXURE TO MINUTE No. 3.

Proposed amendment of the urgent proposition of the Delegates of the French Government, presented by the Delegates of the Sublime Porte.

[This will be found at page 151.]

INTERNATIONAL SANITARY CONEERENCE.

ANNEXURE TO MINUTE No. 6.

Measures adopted by the International Sanitary Conference, in its meetings of the 1st and 3rd March 1866, to be carried out in the event of cholera showing itself this year among the pilgrims assembled at Mecca.

[This will be found at page 175.]

No. 12, dated 14th March, 1866.

From—*Messrs.* W. STUART, E. GOODEVE, and E. D. DICKSON,

To—*The Right Hon'ble* EARL OF CLARENDON, K. G. *&c.*

In continuation of our Report No. 10, we have the honor to inform your Lordship that the Committee appointed by the Conference to report on the two first groups of questions set forth in the plan of proceedings, met on the 10th instant.

This Committee sub-divided itself into six sections: The first was appointed to consider the 1st group of questions, excluding the last paragraph. The second, to consider the first three questions comprised in the second group. The third, the next five questions and the paragraph excluded from the 1st group. The fourth, the following four questions of the second group. The fifth, a question added to this group at the suggestion of Doctor Fauvel. The sixth, the last question of the 2nd group.

The sections were composed as follows:—In the first, Doctor Goodeve, M. Segovia, Doctor Pelikan, Doctor Polak, and Doctor Van-Geuns. In the second, Doctor Hübsch, Count Lallemand, and Doctor Mühlig. In the third, Doctor Maccas, Doctor Moulau, Count Noidans, Doctor Sawas, and Doctor Sotto. In the fourth, Doctor Fauvel, Doctor Gomez, Doctor Lenz, and Doctor Salem. In the fifth, Professor Bosi, Doctor Dickson, and Doctor Millingen. In the sixth, Doctor Bartoletti, Doctor Bykow, Doctor Goodeve, and Doctor Salvatori.

We beg to enclose two copies of the amended plan of proceedings referred to above.

We have, moreover, the honor to inform your Lordship that four other members have recently been added to the Conference, viz.:—Salem Effendi, Delegate from the Egyptian Government; Doctor Polak, Delegate from the Austrian Government; Doctor Van-Geuns, Delegate from the Dutch Government; Doctor Maccas, Delegate from the Hellenic Government.

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO MINUTE No. 7.

Report on a draft programme of the labors of the Conference, drawn up in the name of a Committee composed of MM. Dr. Sotto, Dr. Monlau, Count de Lallemand, Vice-President, Dr. Goodeve, Vernoni, Mirza Malkon Khan, Dr. Mühlig, Dr. Pelikan, and Salih Effendi, President.

(By DR. MUHLIG, *Secretary-Reporter.)*

[This will be found at page 146.]

Dated 27th March, 1866.

From—E. HAMMOND, Esq.,

To—The Under Secretary of State, India Office.

In Lord Lyons' No. 92.

With reference to my letter of the 24th instant, I am directed by the Earl of Clarendon to transmit to you, for the information of Earl de Grey and Ripon and for any observations his Lordship may have to offer thereupon, the accompanying further papers respecting the proceedings of the Cholera Conference at Constantinople, and I am to request that they may be returned to this Office at your earliest convenience.

No. 92, dated 16th March, 1866.

From—LORD LYONS,

To—The Right Hon'ble the EARL OF CLARENDON, K. G., *&c.*

No. 13 of March 16th.

I have the honor to forward herewith a Despatch addressed to your Lordship, which has been sent to me under flying seal by the British Commissioners at the Cholera Conference, in which their latest proceedings are reported.

No. 13, dated 16th March, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—The Right Hon'ble the EARL OF CLARENDON, K. G., *&c.*

With reference to our Despatch No. 6 of the 27th ultimo, we have now the honor to enclose two copies of the protocol (No. 4) of the fourth sitting of the Cholera Conference, which took place upon that day.

Dated 23rd April, 1866.

From—E. HAMMOND, Esq.,

To—The Under Secretary of State, India Office.

British Cholera Commissioners, No. 17.

I am directed by the Earl of Clarendon to transmit to you, for the information of Earl de Grey and Ripon, the accompanying copy of a report on the proceedings of the Cholera Conference at Constantinople.

Dated 11th April, 1866.

From—MESSRS. W. STUART, E. GOODEVE, *and* E. D. DICKSON,

To—The Right Hon'ble the EARL OF CLARENDON, K. G., &c.

We have the honor to report the progress made by the General Committee of the Cholera Conference and its Sub-Committees in answering the questions of the two first groups of the programme already forwarded to your Lordship.

The Sub-Committees of four of the six sections into which the work was divided have completed their reports. Three of these have been disposed of by the General Committee. The 4th and the part of the 5th have been read and are now under discussion; when all the reports have been received a general report will be drawn up and again submitted to the General Committee for final consideration.

Dr. Fauvel has been appointed "rapporteur," and it is hoped that his report will be ready by the end of the present month. After adoption by the Committee, it will be submitted to the full Conference.

At one of the sittings of the General Committee, Dr. Fauvel asked for information relative to the question of Cholera having acquired additional intensity, and put on a diffusive character in and beyond India owing to the insalubrity produced by the destruction of embankments, canals and reservoirs, since the occupation of India by the English, and from these not having been kept in repair by them. He stated that this opinion was widely spread in France. Dr. Goodeve was able to give an answer to this, and to shew that the epidemic cholera which broke out in Bengal in 1817, and from which period the disease acquired its diffusive character, had nothing whatever to do with the destruction or neglect of water works, as these had never existed in the parts of Bengal in which the disease broke out. He took the opportunity of showing that the water works so much spoken of were chiefly in the southern parts of Madras, had gone to decay before our establishment in India took place, and that instead of letting things go to ruin as the French supposed, we had not only largely restored destroyed works of irrigation, but had added extensively to them.

Dated 11th June, 1866.

From—E. HAMMOND, Esq.,

To—The Under Secretary of State, India Office

No. 20. I am directed by the Earl of Clarendon to transmit to you, for the information of Earl de Grey and Ripon, the accompanying copy of a Despatch* from the British Cholera Commissioners reporting the further proceedings of the Cholera Conference at Constantinople.

No. 20, dated 22nd May, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—The EARL OF CLARENDON, K. G., *&c.*

In continuance of our Despatch No. 17 of the 11th ultimo, we beg to inform your Lordship that the reports of all the Sub-Committees appointed for the examination of the questions of the 1st and 2nd groups of the programme of the Conference having been completed and submitted to the General Commission, the report founded thereon was, after several discussions, finally disposed of yesterday. It will be submitted to the Conference as soon as it can be printed.

At the request of Count Lallemand and some other delegates, a meeting of the Conference was held on the 3rd instant. It was attended by three additional members who have joined since we last reported the names of our colleagues. They are—

For Demark.—Mr. Dumreicher, Diplomatic.

For the Roman States.—Monsignor Binnoni, Archbishop of Jaron, Diplomatic, Dr. Spadaro, Medical.

The object of the conveners of the meeting was to ascertain the wishes of the Conference on the immediate appointment of Committees to consider the 3rd group of the programme. The meeting decided, before proceeding further, to wait for the report of the Committee of the 1st and 2nd groups.

It appointed a Committee to re-arrange the questions of the 3rd group. The members of this are—

MM. Segovia, *President.*
„ Monlau.
„ Van-Geuns.
„ Gomez.
„ Pelikan, *Rapporteur.*
„ Spadaro.
„ Goodeve.

The report of the Committee is finished, but it has not yet been submitted to the Conference.

The protocol of the 7th sitting of the Conference was read at the meeting, attention was drawn to the inaccuracies in the report contained in protocol No. 5 of the observations of Dr. Goodeve, mention of which was made in our despatch to your Lordshop No. 14 of the 23rd of March. Notice of our complaints will be inserted in the protocol of the last sitting.

Dr. Dickson drew attention also to the advisability of affording the members some means of correcting the reports of their observations, beyond those furnished by the mere reading of the protocol at a sitting of the Conference. It was agreed that they should have the opportunity of inspecting the reports of the Secretaries before they are read at the meetings.

Dated 16th June, 1866.

From—E. HAMMOND, Esq.,

To—The Under Secretary of State for India.

I AM directed by the Earl of Clarendon to transmit to you, to be laid before the Earl de Grey and Ripon, the accompanying copies of two further Despatches* from the British Members of the Cholera Conference at Constantinople, reporting the proceedings of the Conference.

* No. 22, No. 23.

No. 22, dated 5th June 1866.

From—E. D. DICKSON, Esq.,

To—The Right Hon'ble the EARL OF CLARENDON, K. G., *&c.*

We beg to report that meetings of the Conference were held on the 28th and 31st of last, and on the 2nd and 4th of the present, month.

The Report of the Commission plenière on the 1st and 2nd groups of the programme was presented, but it has not been discussed. We have the honor to enclose the three accompanying copies of it.

The time of the meetings was occupied chiefly with the reception and discussion of the revised programme of the 3rd group of questions. This was adopted with some modifications. Another amendment was proposed, but was not adopted. It will be found in the *procés verbal* of the meeting of the 2nd June. In the Committee of the programme of the 3rd group it was proposed that an International Commission should be sent to India to study the original propagation of cholera. This was not actually adopoted in the Report of the Commission; but it was recommended that a Commission should be sent to India, leaving it undefined how it should be composed, and by whom it should be instituted. The matter is treated of in page 3, in Clause 20, page 6 of the above Report forwarded herewith. Clause

20 contains the proposition, and runs thus—"Commission des re-
" cherches scientifiques sur l'origine et la genese du choléra dans les
" lieux que l'on croit être le berceau de cette maladie."

From the first we opposed the idea of any investigation of an international description; but we think that the British Government would not object to undertake itself such enquiries as might be useful to the world, and this is expressed in a note which precedes Dr. Goodeve's signature of the Report.

When the matter came up for the consideration of the Conference, we proposed an amendment upon Clause 20 in the following terms:—

"Appeler l'attention des gouvernments respectifs des pays que
" l'on croit être le berceau du choléra sur l'utilité d'entreprendre ou de
" continuer des recherches locales vigoureuse sur l'origine et la propaga-
" tion de la maladie.

"Enumerez les questions dont la solution, ou une connaissance plus
" profonde est demander par la science."

The original proposition had 17 votes against, and two for it. There were several abstentions.

Our proposition was carried,—17 votes being recorded for, and none against, it. The two supporters of the original proposition desired it to be noted that they had not voted against the amendment.

At the meeting of the 31st May the French Delegates requested that business of the day might be suspended to enable them to read the enclosed communication, the submission of which had been approved of by the French Government, relative to the increase of the Ottoman Health Dues by substituting Tonnage Dues instead of the trifling tax at present derived from Bills of Health, in order that the Turkish Quarantine Establishments might be made self-supporting.

The proposition met with opposition amongst the majority, and led to energetic discussion. The grounds of opposition were two:—One, that the matter being a question of tariffs, was beyond the competence of the Conference; and the other, that, in the absence of instructions, different Members did not feel justified in entertaining the proposition.

Dr. Dickson opposed the reception of the proposal on the ground of want of instructions. Mr. Stuart moved that the Conference, on account of its incompetence to entertain the proposal, should pass to the order of the day.

This was lost by 18-3; M. Keun, the Dutch Diplomatic Delegate, and ourselves, voted for it. Several Members abstained.

After the strongly expressed opinion of several of the Delegates, some of whom suggested that the communication should be received, and allowed to stand over pending instructions from their respective Governments, Count Lallemand himself moved an amendment to that effect. This was carried by 20-4; M. Vetsera, the Austrian Diplomatic Delegate, and M. Keun, voted with us in the minority.

[*2nd Annexure to Minute No.* 9.]

Report submitted to the International Sanitary Conference by a Committee composed of M. Segovia, President, and Doctors Gomez, Goodeve, Monlau, Pelikan, Spadaro, and Van-Geuns, appointed to revise the questions in the 3rd group of the programme (preservation), and to propose the method to be followed in their consideration.

DR. E. PELIKAN, *Reporter.*

GENTLEMEN,—With the object of facilitating the consideration of the questions comprised in the 3rd group of the programme, you have charged us with their re-examination, in order to complete and modify them conformably to the researches and conclusions of the General Committee, as well as to classify them in such a way as to permit of their logical distribution between the Committees to be appointed by the Conference.

Before submitting our plan to you, we thought it would be useful to precede it with some remarks or explanations.

As for the classification of the questions, in grouping together in the first place, those that seemed to be intimately connected, we found ourselves under the necessity of giving them an order somewhat different from that of the general programme. This difference consists principally in this, that instead of dividing the measures into (*a*) preventive measures; and (*b*) restrictive measures—as is done in the programme—we propose another division, *viz.*, 1*st*, preservation, by local hygienic measures, including naval hygiene; 2*nd*, preservation by quarantine measures; and 3*rd*, preservation by special sanitary measures for the East. Now, any body may easily convince himself, by comparing our plan with that of the programme, that not a single question in the third group has been omitted in our classification. As for the lacunæ that may exist, we have tried to fill them up, at the same time, however, leaving to the Committees to be appointed the duty of completing them still further by more details.*

The practical advantage of such a plan of labor is evident. It is clear that the Committees that are about to sit upon the third group will find in their respective programmes all such questions as are connected with each other, and those that are of the same nature will not remain scattered through the various sections, so that repetitions in the reports of the Committees will be obviated.

Instead of speaking merely of the sanitation of ports (Section II), we deemed that it would not be superfluous to add that of towns in general, and we have invited the attention of the future Committee, which will take up these questions, to filthy water, latrines, and sinks, as being of special importance in connection with the propagation of cholera, and which should be looked to before the appearance of the disease in any locality whatever.

* After the number of each question we have placed, within parenthesis, the number attached to the same question in the programme. Such words and sentences as have been added are printed in italics.

The question of *naval hygiene* deserves, in our opinion, all the attention of the Conference. It comprises: (*a*), hygienic measures applicable to the departure of ships; (*b*), hygienic measures applicable during the voyage; and (*c*), hygienic measures applicable to the arrival of ships at their ports of destination. As a matter of course this does not comprise a complete exposition of generalities and details, which find their place in the manuals upon this subject: the Committee confines itself to requesting an indication of the practical measures that may, and ought to, contribute towards preservation from the importation of cholera.

Our Section III comprises Sections 5 and 18 of the programme. To render the first question clearer and less vague and indeterminate, we have added to it the words *of sanitary police* (not including quarantine measures). We have also added to this paragraph some details *regarding the sanitary measures to be adopted in the event of cholera threatening to invade a place.*

The 2nd Section is devoted to the questions touching quarantine measures; the first four questions are connected with quarantine measures in general, and the last eight with the application of those measures.

To these paragraphs we have added some details regarding the organisation of lazarettos; the question as to international lazarettos (Section VIII.), a question, we are convinced, of great importance and worthy of the most scrupulous examination on the part of the Conference; and regarding the *survey and search* of ships, considering that the rules now in force connected with this sanitary formality do not give sufficient guarantees against the importation of cholera into our countries.

In the 3rd Section, under the head of *preservation by special sanitary measures for the East,* we have enumerated, although in different order, the five questions of the programme properly connected with this subject, adding to them yet another question *as to the despatch of a commission of scientific research to study the origin of cholera in the places believed to be the birth-places of this disease.*

As the information as yet possessed by us upon this point is only too incomplete, it is evident that it is necessary to complete it by local study in the birth-places of the disease, and in accordance with a rigorous method of exploration. Let us hasten to say that our proposal has nothing whatever to do with the mode of organising this scientific commission, or with the plan of the labors to which it will have to devote itself. All these details may be agreed upon and even dictated in advance by the respective Governments of the countries which must be the theatre of these purely scientific studies. If the nature and extension of these important studies required it, we believe firmly that the necessary elements for their powerful and energetic realisation would

not be wanting, and that the Governments to which our proposition would apply would be the best disposed to co-operate in this fundamental work of efficacious and decisive preservation.

And now we show the order we have just proposed:

I.

PRESERVATION BY MEANS OF LOCAL HYGIENIC MEASURES.

Section I. (1).—Are there any preventive means permitting of the extinction of the original foci of cholera in India?

Section II. (2).—Are there public or private measures of hygiene, measures of sanitation, applicable on a sufficiently large scale to admit of the destruction or sensible diminution of the predisposition to choleraic infection? Sanitation of *towns in general and of ports in particular. Town drainage: removal of filth and rubbish. Latrines and sinks. Mode of burial and sepulture of corpses. Naval hygiene.*

Section III. (18 and 5).—What measures of *sanitary police* would it be advisable to take in the event of cholera threatening to invade a place, either by land or by sea? Temporary interruption of communications with the infected places; prohibition of emigration and fairs. *Movements of troops. Rural emigration, dissemination, formation of camps. Public succour—separation of cholera patients in hospitals. Isolated cholera hospitals.*

Section IV. (1 and 13).—Are there means of extinguishing foci formed by importation? Disinfection of dwellings, of effects, of *dejecta, of latrines, in connection with the destruction of these foci.*

II.

PREVENTION BY MEANS OF QUARANTINE MEASURES.

Section V. (6).—What are the lessons taught by experience relative to the quarantine systems at present in force, in various countries, against invasions of cholera? Can we hope for greater success from quarantines established upon other basis?

Section VI. (3).—Must we not start with this fundamental principle that the closer *quarantine measures and other* restrictive means are applied to the primitive focus, the more we may count upon their efficacy?

Section VII. (20).—If we weigh, on the one hand, the disadvantages resulting to commerce from restrictive measures, and on the other, the disturbance caused to trade and commercial transactions by an invasion of cholera, to which side do we think the balance would incline?

Section VIII. (8).—It is not necessary to choose for quarantine establishments certain fixed places, remote from centres of population and the ways of communication? *International lazarettos.*

Section IX. (12).—What are, in the point of view of public hygiene, the guarantees to be required for lazarettos? *Site, construction, distribution, and system of lazarettos? Lazarettos of observation. Lazarettos for rigorous quarantine. Floating lazarettos. Temporary lazarettos.*

Section X. (4).—*Local isolation of original foci. Isolation of a country or locality by sanitary cordons.* What is the use of these cordons, and how should they be applied? *Land lazarettos, permanent and temporary.*

Section XI. (11).—Foul bill, suspicious bill, and clean bill of health in their application to cholera.

Section XII.—*Survey and search in a maritime sanitary aspect.*

Section XIII. (7).—Of the incubation of cholera in connection with the question of quarantine measures.

Section XIV. (10).—Ought the days spent on the voyage to be included as quarantine days, and if so in what cases?

Section XV. (9).—Difference to be established between the quarantine of observation and the rigorous quarantine; fix their duration.

Section XVI. (9 and 13).—What distinctions should be established, with respect to the quarantine of observation and the rigorous quarantine, between the crew, the passengers and their effects, the goods and the ships, accordingly as there have or have not been choleraic accidents on board? Disinfection of ships and their effects.

III.

Reservation by means of special sanitary measures for the East.

Section XVII. (19 and 14).—Questions of posts of observation and of sanitary physicians, for instance at Jeddah, Yambo, Suez, Alexandria, in Persia, &c., Powers and duties of the sanitary physicians.

Section XVIII. (16 and 15).—Sanitary police *of the pilgrimages.* Is it not necessary to lay it down as a rule that pilgrims arriving from India, or from any other country where cholera prevails *(endemically or epidemically)* ought always to perform a quarantine of observation, and if necessary, a rigorous quarantine, in a place to be fixed upon the Arabian coast, before they should be allowed to swell the general gathering of the pilgrims at Mecca?

Section XIX. (17).—Is it necessary to apply quarantine measures to arrivals from the East Indies in general; in what circumstances and to what extent?

Section XX.—*Commission of scientific enquiry as to the origin and generation of cholera in the places believed to be the birth-places of the disease.*

Such is the order deemed by us to be the most suitable for the consideration of the questions in the 3rd group of the programme, which the Conference can confide to three Committees, according to the triple division established in our plan.

A. M. SEGOVIA, *President.*
DR. GOMEZ.
„ MONLAU.
„ SPADARO.
„ VAN-GEUNS.
„ E. PELIKAN, *Reporter.*

Dr. Goodeve signed with the following reservation:

"Before signing the report of the Committee, I think I should "state that I cannot concur in that part of the plan which proposes "the despatch of a scientific Commission to make a local study of "cholera in the places where it is believed to have its origin. Although "the case was not provided for in my instructions, I cannot believe that "my Government would consent to the despatch of an official Commis-"sion to India. I am convinced, however, that if the Conference really "wishes to indicate the researches and the information it may regard as "useful in clearing up the important questions of the origin and gener-"ation of the disease, my Government will not fail to pay attention to "its wishes by every means in its power. For the rest, the very nature "of such an enquiry would require years, perhaps, before conclusions "could be arrived at possessed of any scientific value, and having re-"gard to the state of things in India, the Government alone is capable "of undertaking such an enquiry with any chance of success.

E. GOODEVE."

Proposition made by the Delegates of the French Government at its 10th sitting.

Pera, the 31st May 1866.

GENTLEMEN,—We, the undersigned Delegates of the Government of His Imperial Majesty the Emperor of the French, have the honor to call the attention of the Conference upon a question which has not been mooted in their programme, and which, though not exactly connected with their enquiry, is yet not unworthy of interest for the public health, and, under those circumstances, could not be well laid aside.

We wish to speak of the tariff for sanitary duties collected in the Ottoman ports for the purpose of recovering the expenses incurred on account of Sanitation Service.

This tariff such as it is, though still levied, is out of date, and does not answer the object intended. Established originally either before, or prior to, the introduction of the Sanitation Service in the ports of that Empire, that is to say, at a period when quarantine had been fully established, or nearly so; and, in consequence the chief source of its profits. There is now no occasion for it as quarantines are seldom used; and if used, for many years the profits accruing therefrom do not amount to more than one-fifth of the income of former years.

This state of things is not only to be deplored as unjust towards the Ottoman Government, who have often complained, but it is unfortunate for the Service, and would become much more so if allowed to continue; as it would not be a matter to marvel at, if the Government took little or no interest in the matter, considering that they are expected to defray almost all the expenses, whilst they should only bear a portion of them, it is deemed, under these circumstances, that a special Service like that of Health, to be carried out with any certainty, must reckon upon its own special resources.

Ten years have already elapsed when the Sublime Porte made an attempt to effect a reformation in the Sanitary Tariff. This attempt failed, owing to reasons unknown to us; but last year a Commission of seven Members of the Superior Board of Health, after carefully studying the subject, put forth a new project of reform, based upon the wants of a middling year of Service, reckoning upon probable collections, conformably, in consequence, to the principles enunciated by the Sanitary Conference of Paris of 1851; and by virtue of which, sanitary levies should not constitute a tax, but merely a reimbursement of expenses.

This proposal, which will be found narrated, in the Report here subjoined, bearing date the 18th February 1865, has been communicated to the different maritime Governments, who have not as yet, we believe, agreed to its terms.

The Government of the Emperor, after having maturely deliberated thereon, has authorized us to declare that he does not object that the proposal in question should be taken into consideration, and adopted as the basis of a reform of which he admits the need of.

Without raising any positive objections against the tariff of the 26th paragraph (14 centimes) per ton, which is proposed as equitable, he recommends that the sanitary duties should be made as light as possible in reference to navigation.

We are authorized, in other respects, to move the Conference on that subject, and to beg of it to state its sentiments thereon, and to express an opinion in any manner which will be deemed by that body as the most useful and just. We hope that that opinion, owing to the

respect paid to the deliberations of that Assembly, will exercise a wholesome influence upon the conclusions to be arrived at on a question which is not unworthy of notice.

We beg of you, then, gentlemen, to take into consideration our proposition, and to nominate a Committee for the purpose of enquiring into its merits, and to furnish you with their Report. You will authorize this Commission to adopt, as its basis, the examination of the proceedings and proposals of the Superior Board of Health alluded to in the Report, herewith subjoined, bearing date the 18th of February 1865. We think it advisable that the Commission should embrace amongst its Members one or two Members belonging to the Superior Board as they took part in the discussion of the proposition referred to by us.

A. DE LALLEMAND.

DR. FAUVEL.

No. 23,' dated 5th June, 1861.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—The EARL OF CLARENDON, *&c. &c.*

In continuation of our despatch No. 22, we have the honor to inform your Lordship that at the meeting of the Conference of the 4th instant, M. Krause, the Prussian Political Delegate communicated a telegram received from the Prussian Consul at Alexandria. It was as follows:—

"ALEXANDRIE, MAI 31.

Le trente et aujourd'hui 2 navvies le sont arrivés à Suez de Damedas (Jeddah?) avec pe'lerins, patente déclarant épidémie non désignée régne à Jeddah. Sont en quarantine du 26-29, 106 déces. A Suez deux cas de fievres pernicieuces dont un mortel. Hier ici un décès Choléra Sporadique. Intendance donne pratique nette."

Dr. Bartoletti read telegrams announcing that within the last few days, Cholera had appeared at Tiberias. M. Krause's telegram was not very definite, but it gave rise to much discussion as to what should be the duty of the Conference on the occasion especially as a large number of Egyptian troops has just arrived from Alexandria at Constantinople, and as many more are expected from the same place.

We were of opinion that the matter should remain in the hands of the Ottoman Board of Health. It was however decided by a large majority of the Conference to express the hope that the abeve mentioned Board would ascertain immediately the real state of health in Egypt, and that in the mean time it would direct all arrivals from

Egypt to be subjected to the rules of the foul bill of health, the troops already arrived to be carefully inspected, and those coming from Egypt to be examined at the Dardanelles. The Conference also decided to request H. E. Salih Effendi to be good enough to proceed at once to inform the Grand Vizier and Minister of Foreign Affairs of the resolutions of the meeting.

Having expressed our opinions that the matter should be left to the Ottoman Board of Health, we abstained from taking further part in the discussion or votes.

The Conference took no steps with regard to the Cholera at Tiberias. After the foregoing had been disposed of, the Turkish delegates received a telegraphic message in Arabic from Egypt which, as far as it could be translated at the meeting, seemed to corroborate Mr. Krause's information.

Dated 30th June, 1866.

From—E. HAMMOND, Esq.,

To—*The Under Secretary of State for India.*

I am directed by the Earl of Clarendon to transmit to you, to be laid before Earl de Grey and Ripon, copies of a Despatch from the British Cholera Commissioners and of the printed papers therein referred to, reporting the further proceedings of the Cholera Conference.

No. 26, dated 18th June, 1866.

From—E. D. DICKSON, Esq.,

To—*The* EARL OF CLARENDON, K. G.

We have the honor to enclose three copies of protocols of the 8th and 9th meetings of the Conference.

We beg to inform your Lordship that since our last report, the Conference met on the 7th, 9th, 11th, 14th and 16th instant, and was chiefly occupied with discussions on matters of the 1st and 2nd groups of the general Report. Modifications were made in the 2nd Chapter at page 6., by which Persia and the Dutch possessions in the Indian Archipelago were removed from the doubtful class; as it was held that there were sufficient grounds to consider those countries free from endemic choleraic disease. However, as it was proved that Persia was very liable to Cholera in an epidemic form, the exemption was accompanied with the insertion of a special paragraph showing the degree of its liability to the disease.

A long discussion took place on the 4th chapter relating to the Hedjaz. Additional attempts were made to show that cholera was always imported there from India; and more especially with reference to the outbreak of last year. Doctor Dickson replied on the evidence brought forward in order to show that the alleged proofs were not conclusive. The original conclusion however of the "Commission Pleniére" was carried by a majority of 18 votes for, 3 against, and 1 abstention.

All the remaining chapters of the first group were passed without modification.

At the meeting of the 7th instant, three Committees were formed to draw up answers to the questions of 3rd group; and they were instructed to report direct to the Conference. They are composed as follows:—

1st Committee.—M. Segovia (as President) M. Kean; Malcolm Khan; M. Vetzera; Dr. Gomez; Dr. Goodeve; Dr. Lentz; Dr. Millingen; Dr. Mutliez; Dr. Spadaro, and Dr. Morlan as "Rapporteur."

2nd Committee.—Salit Efendy (as President) M. Stenersen (as vice President) Comte de Naidans, Chevalier de Soveral, Dr. Dickson, D. Hübsche, Dr. Maccas, Dr. Pelikan, Dr. Salvatori, Dr. Sawas, Dr. Bartoletti (as Rapporteur).

3rd Committee.—Comte Lallemand (as President) M. Kalergi; M. de Krause; M. Vomoni, Dr. Bosi, Dr. Bykon, Dr. Polak, Salem Bey, Dr. Sotto, Dr. Van Genus and Dr. Fauvel (as Rapporteur).

In our Despatch No. 23, dated 5th June, we reported to your Lordship, that on the 4th instant, the Conference had expressed a wish respecting the immediate application of quarantine measures against arrivals from Egypt. Hence a portion of the time of most of its subsequent meetings has been devoted to hearing and discussing telegrams, and reports arrived from that country, referring to the state of its public health and that of the countries bordering on the Red Sea.

At the sitting of the 7th instant, it was announced that the Ottoman Board of Health had carried out the measure recommended by the Conference, and that the Superintendent of Quarantine having afterwards learned that the state of health in Egypt was quite satisfactory, had considered himself justified in suppressing this measure. The Conference however expressed itself as far from satisfied with the news received from Egypt, and requested the Board to re-establish the quarantine without regard to the nature of the Bill of the Health issued at Alexandria. The Board has in consequence applied fifteen days' quarantine upon all arrivals from Egypt.

At the meeting of the 16th instant the telegraphic reports communicated to the Conference by Dr. Bartoletti and Salem Bey, were very satisfactory, both as regards Egypt, and the ports of the Red Sea. The Conference did not pronounce, however, any further opinion as to measures.

In conformity with the principle which we had established, of not interfering in questions connected with the duties of the Ottoman Board of Health, we abstained from taking any part in these discussions.

No. 8.

INTERNATIONAL SANITARY CONFERENCE.

Meeting of the 3rd May 1866.

COUNT DE LALLEMAND, *Presiding.*

The International Sanitary Conference held its eighth meeting at Galata-Serai, at half-past one in the afteroon of the 3rd May 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to his Majesty the Shah of Persia, (setting for the first time.)

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Denmark:

Chevalier de Dumreicher, Consul-General and diplomatic agent at Alexandria, (sitting for the first time.)

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargè d' Affaires.
Dr. Monlau, Member of the Superior Spanish Council of Health.

For the Papal States:

Monseigneur Brunoni, Vicar-Apostolic,
Dr. Ignace Spâdaro, } Sitting for the first time.

For France:

Count de Lallemand, Minister-Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

The Hon. W. Stuart, Secretary to Her Britannic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece.

M. Kalergi, Secretary to the Legation of His Hellenic Majesty.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands;

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor Van-Geuns.

For Persia:

Mirza Malkom-Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to his Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Charge d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attache in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hubsch.

For Turkey:

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

For Egypt.

Dr. Salem Bey, Clenical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-mother of His Highness the Viceroy of Egypt.

On the motion of Dr. Bartoletti, the Conference elected Count de Lallemand to fill the presidential chair, it being probable, Dr. Bartoletti said, that His Excellency Salih Effendi would not attend the meeting on account of a fire which had broken out near his house.

Count de Lallemand, after thanking the Conference, asked Baron de Collongue, one of the Secretaries, to read the minutes of the meeting of the 8th March.

The minutes of the seventh meeting were adopted.

After the adoption of the minutes, several delegates asked to be allowed to speak as certain passages in Minutes Nos. 3, 5, and 6 required correction.

M. Fauvel spoke first. He called the attention of the Conference to the 5th minute, with regard to which he made the following remarks:—

"The Conference will remember, said M. Fauvel, that a portion of the 5th minute was not read because it reproduced Mr. Sawas' speech, as handed by him to the Secretary in manuscript. In looking over the said minute after it was printed, I was very much astonished to find in it a passage which M. Sawas had promised, in consequence of my observations, to suppress, and, what is more, to find in another place in the same speech an entire passage which he had never spoken. I am far from suspecting M. Sawas of any bad intention, and I believe simply that there was a mistake in the insertion of these passages.

"I therefore desire the suppression, conformably to the decision of the Conference to which M. Sawas himself submitted, of the entire passage contained in the 15th page of the 5th minute, where M. Sawas has inserted words not uttered in the speech made by him."

M. Fauvel said he alluded to the following paragraph, which he read, in the beginning of M. Sawas' speech:—"We have rejected every

"other means that could be proposed, and this was done to prove "that every thing had been studied. In other words, he declares that "his project was not presented to be discussed, that its authors had "already come to the decision to reject every possible amendment or "modification, that it was a project to be taken or left exactly as it "stood."

M. Fauvel continued that in the second part of M. Sawas' speech, which was not written, and not reduced to writing till after its delivery, instead of replying to his (M. Fauvel's) remarks touching the ignorance of the Persian delegates as to the route followed by the pilgrims, not only did M. Sawas not allude to them at all, but in the passage, as printed, he would have them believe that he (M. Fauvel) was the person who was ignorant of the real route of the pilgrims. In fact this was what was read at page 34. "To attempt to dispute the "regular march of the caravan is to seek to deny the least contestable "and the most generally known facts. For our part, we were struck "with the most utter astonishment when we heard M. Fauvel sneer at "our ignorance of geography, and maintain that the pilgrims, rather "than go to Medina, would make anxious efforts to reach Yambo in "order to embark there Our astonishment was all the greater, because "M. Fauvel has studied the question for four months, and he could "not be permitted to plead ignorance of the normal and invariable "route of the caravan."

M. Fauvel protested against this passage, which was not contained in M. Sawas' speech, for it was evident that, if it had been pronounced and he had heard it, it would not have been left unanswered. Could M. Sawas have forgotten that it was he (M. Fauvel) who had traced out for him the true route followed by the pilgrims? How then could he have attributed to him ignorance of a fact which he had been the first to point out?

"And if now," concluded M. Fauvel, "M. Sawas maintains that "he did really speak this part of the discourse, I protest none the "less against the gratuitous error he attributes to me."

In reply to M. Fauvel, M. Sawas said that the passage against which M. Fauvel had protested, and which he had agreed to strike out, was not the passage in p. 15, against which M. Fauvel now complained. That passage no longer existed in the speech, for he had suppressed it. It related to what M. Fauvel had said, or, to speak more properly, what he (M. Sawas) thought he had said with regard to those who did not believe in the transmissibility of cholera. In the beginning of his speech he (M. Sawas) had said: "According to "M. Fauvel, those who do not believe in the transmissibility of cholera are men who have not finished their scientific education." M. Fauvel having declared during the course of the same meeting that he had never said anything of the kind, M. Sawas had suppressed the passage in his manuscript, and it certainly did not appear in the minutes.

As for the second passage, against which M. Fauvel now protested and complained, he could assure M. Fauvel that he had spoken it, and that nobody, not even M. Fauvel, had thought of opposing him. That remark must have been made by him for it touched upon an essential part of his demonstration, and that resulted from his notes. It was important for him to demonstrate that the pilgrims, after having visited Mecca, were bound to proceed to Medina, where they had to visit many holy tombs.

M. Fauvel, continued M. Sawas, was wrong in believing that he had no desire to touch upon the question regarding the route of the caravan. On the contrary, his wish was to show him that he was not ignorant of the real route, as M. Fauvel had pretended, and, with this object in view, he had urged, contrary to the belief held by M. Fauvel, that *religious motives* prevented the pilgrims from pursuing the route traced by M. Fauvel, who thought that the pilgrims, after having left Mecca and arrived at Bader, would be obliged to proceed direct to Yambo, not being able, on account of the mountain-range, to proceed to Medina. On this occasion he said that M. Fauvel was ignorant of the religious reasons which obliged the pilgrims to go to Medina after having visited Mecca.

It appeared from all this, added M. Sawas, that the passage attacked could not but have been read: it could not have been inserted after he had read his speech, for it was too essential to his argument.

He thanked the honorable the French Delegate for thinking that there could have been no bad intentions on his part. Perhaps the passage in question had escaped him (M. Fauvel), for he had spoken it, and, if need were, he was ready to put in his manuscript.

M. Fauvel, after having insisted on the necessity of only printing such discourses in the minutes as were read in their entirety and adopted by the Conference, added that it was incumbent on the Secretaries as their duty to convince themselves that the sense of the speeches handed to them was not changed, and that they were printed as heard and adopted by the Conference.

Count de Lallemand reminded the Conference that, if some passages of the minutes of the 5th meeting were erroneous, the Secretary was not in fault, owing to his having been dispensed from reading the speech which had been handed to him by M. Sawas in writing, and that he had had it printed as received. Dr. Dickson desired that before the minutes were printed off, every speaker should have the right of rectifying the part belonging to him.

It was pointed out to him that the minutes could not be amended after adoption. Every speaker had the right of correcting the passages in which he was concerned while they were being read before the Conference.

On the motion of Count de Lallemand, the Conference decided that in future not only would the text of the minutes be read, in so far as concerned what was said on the spur of the moment, but also all motions and discourses handed in in writing.

With reference to the minutes of Meeting No. 5, Dr. Goodeve requested the amendment of a passage at p. 43, which did not exactly convey his meaning: every thing he had learnt supported what had been urged by MM. Bartoletti and Sawas.

But in commencing a new sentence, he had spoken of the pilgrims from India to demonstrate that, by the proposed measure, ships would suddenly be compelled to put out to sea, abandoning their passengers and their commercial operations. At the same time he had pointed out the severity of the measure touching this great fleet of 40 or 50 sail, which would perhaps require a great depth of water, and which, on account of this measure, would be obliged to undertake a tedious and very dangerous navigation in the Red Sea, seeking for a port, with the capacity of which to receive and shelter it, it was unacquainted.

M. de Krause pointed out a chronological error which had crept into the minutes of the 6th meeting, and which, he might say, he had drawn attention to immediately after the reading of those minutes.

The discussion of the last and not of the second article of M. Mühlig's amendment did not take place until after the termination of the discussion and the division upon Article 8 of the French project. Consequently, continued M. de Krause, the sentence "*its suppression was accepted*" (p. 16) ought to be placed immediately after the words "*requested the suppression of the Article.*"

Moreover, continued M. de Krause, at p. 15 there was a typographical error which essentially altered the sense of his (M. de Krause's) words. In place of "*the question was not to preserve Suez, but all Egypt from a fresh invasion of cholera,*" the sentence should be read thus: "*the question was not to preserve Suez, but all Europe,*" &c.

Finally, added M. de Krause, a transposition of names completely distorted the views of the Prussian Delegates with respect to the French proposition.

At p. 11 it was said: "The second Article was adopted by 15 votes, *all the Delegates* above mentioned voting, with the exception of Messieurs. de Krause and Mühlig."

Instead of de Krause and Mühlig, the names of Salih Effendi and M. Bartoletti should have been inserted.

M. Bartoletti said he had voted in that sense.

M. Segovia pointed out a geographical error: at page 14 of the minutes of the sixth meeting he had been made to say that Aden was a volcanic island. Having been twice to Aden, no body was better qualified than himself to know that Aden was not an island—at the most, he could be made to say that it was *of volcanic formation.*

M. Lenz said that when the minutes of the sixth meeting were being read, he had not remarked that the Russian Delegates accepted Salih Effendi's declaration (p. 4, protocol No. 6). If the Russian

Delegates had pronounced in favor of the declaration of the Delegates of the Sublime Port, they had done so because they had not quite caught the meaning of what was said. But as soon as they became aware of it, they pointed out that between Salih Effendi's declaration and the proposition they meant to frame, there was a great difference. The precise meaning of his (Mr. Lenz's) declaration was this:

"The Delegates of the Russian Government declared that, not "having concurred in the principle of the French proposition, they "would abstain from discussing and voting upon the supplementary "articles of that proposition."

Mr. Stuart observed that that was also the idea of the British Delegates. He, therefore, would like to see a correction made in a passage in p. 16 of the protocol, in which it was said that he and his colleagues had abstained from joining in the vote: it should read: "*the British Delegates refrained from taking part in the discussion and in the vote upon the secondary provisions of the French project.*

M. Bartoletti observed that what he had said after M. Monlau's remarks (minute No. 6, p. 10) was not sufficiently clearly rendered. He had meant to say that if the Ottoman Government consented to adopt the French proposition, the Conference ought to leave to the same Government the choice, free and unlimited, of the means to be employed in its execution.

M. Naranzi, one of the Secretaries, pointed out another error which had crept into minute No. 6.

The names of professors Maccas and Van-Geuns wrongly appeared among the names of the members present. They did not take their seats among the other Delegates until the next meeting.

Mirza Malkom Khan desired to make some remarks with reference to minute No. 3.

"I was very much astonished," he said, "to find that my speech "did not appear in it; and I am not aware that the Conference de- "cided on suppressing it. I recollect only that I at once begged the "Secretary to insert it in the minutes *in extenso*, and I did so because "I had been interrupted in reading it to the Conference.

"As this sort of thing may occur again," continued Mirza Malkom Khan, "I wish to know whether the Secretaries have the right of "suppressing the speeches of the Delegates *ad libitum*. If not, I desire "that the Conference may lay down, once for all, that every speech, "read or delivered extempore, must appear in the minutes."

Baron de Collongue, one of the Secretaries, explained that he had given a summary, and a very complete summary, of Mirza Malkom Khan's speech in minute No. 3. The reason which had prevented him from inserting it *in extenso* was that it had to be printed separately as an annexure to the minutes of the 3rd meeting.

Count de Lallemand spoke to the same effect.

On the motion of MM. de Krause and Fauvel, who pointed out to the Persian Delegate that the Conference had conferred upon the secretaries the power of abridging the speeches, and, if they were too long, of inserting only a substantially complete abstract of them, it was decided by the Conference (by 16 against 11) that the secretaries should remain judges as to the space to be given in the minutes to speeches read, or delivered extempore, before the Conference—though at the same time the conclusions were to be given *in extenso* (this was decided on the motion of M. Dumreicher).

"Such being the decision of the Conference," said Mirza Malkom Khan, "I lay my printed speech upon the table, and beg the Secretaries to be good enough to distribute it during the course of the meeting."

M. Sotto expressed a wish to communicate to the Hon'ble Conference a very interesting report received from Alexandria by M. Vetsera, regarding the sanitary state of the arrivals from Jeddah during the last two months, signed by Ahmed Effendi Hachem.

M. Sotto communicated the following particulars extracted from the report:

Between the 9th and the 18th March last, 33 ships arrived at Jeddah with 3,772 pilgrims, and crews amounting to 931 men.

Ahmed Effendi was informed by an English captain that 14 persons who had been suffering from diarrœa had died on board an English steamer from Bengal, and that there had been five fatal cases on board a Turkish vessel. On board these ships, continued M. Sotto, 21 individuals altogether had fallen ill, 19 of the cases terminating fatally.

Between the 19th and the 27th of March, added M. Sotto, there landed at Jeddah 3,366 pilgrims who had taken passage on steamers and on some sailing vessels, amounting in all to the number of 27, the crews of which consisted of 716 men. There had been 11 deaths on board a Turkish steamer which had come from Yemen, and two persons had died of *spasm* on board two other steamers.

The Egyptian Government, continued M. Sotto, established two quarantines—one near Suez, almost at Moses' Wells, and the other at El-Wesch.

The Austrian consul-general sent a medical gentleman, Dr. Reil, to Suez, to keep him informed of everything occurring. Between the 28th March and the 2nd April, wrote Dr. Reil, 38 vessels arrived from India, 13 under the British and 15 under the Ottoman flag, carrying altogether 5,227 pilgrims.

On board these vessels, said Dr. Sotto, there had been 26 deaths in 32 cases of sickness, the nature of which was not stated. In the report received by M. Vetsera, it was said that up to the date of its despatch no sort of uneasiness was felt regarding the pilgrims at Mecca.

M. Bartoletti begged M. Sotto to tell him whether all the Turkish vessels came from India, and whether it was definitively known that their number amounted to 15.

M. Sotto replied that there were really 15 vessels under the Turkish flag and 13 English vessels, and that 14 of the Turkish vessels had come from India, one steamer only coming from Hodeyda in the Red Sea.

M. Vernoni also mentioned a report which had been sent to him by the Italian consul-general at Alexandria, and which in every respect confirmed the particulars which had just been communicated to the Conference by the Austrian Delegate.

Moreover, added M. Vernoni, it was stated in the same report that the President of the Sanitary Intendancy of Alexandria had called a meeting of the Powers to make to them the following communication.

Supposing cholera should manifest itself in the Hedjaz before the adoption, by the Conference sitting at Constantinople, of the necessary measures to be carried out in good time, in what manner should the Egyptian sanitary authorities act with regard to the pilgrims ?

Colucci submitted a number of questions in connection with this point for solution by the Board of Health.

Salem Bey informed the honorable Conference that he had already placed the Egyptian Sanitary Intendancy in possession of the debates and the urgent measures adopted by the Conference, and that, moreover, he made it a point to transmit to it the minutes of the meetings of the Conference. He added, however, that he was not aware whether those measures had been carried into execution.

Dr. Vernoni would then ask how it was that on the 14th of April the Sanitary Intendancy of Alexandria was not acquainted with the deliberations of the Conference and the urgent measures adopted by it ? The assertion made by Dr. Salem Bey, the Egyptian Delegate, was very categorical. He had assured the Conference that he had immediately communicated to his Government the measures adopted by the Conference with a view to the possibility of another epidemic.

M. Vetsera informed the honorable Conference that the Egyptian Government was quite aware on the 23rd of April of the urgent measures adopted by the Conference. The Austrian consul, added Mr. Vetsera, had informed him of the fact, in pointing out to him that the instructions given by the Sublime Porte to the Egyptian Government were based upon the urgent measures laid down by the Conference.

Dr. Dickson said he also was ready to furnish some particulars in connection with this subject. In a report addressed by Colucci Bay to the Sanitary Intendancy of Constantinople, it was stated as follows:

"Dr. Hassan Effendi Hachem, a medical officer of the Egyptian "Government, attached to the Hedjaz Commission, has been placed "at Jeddah to watch the arrivals.

"From the 9th to the 27th March, 60 ships arrived at Jeddah "from Suez, Bombay, Souakim, Yambo, Massowah, Aden, Hodeyda, "Mocha, Muscat, Gunfoudah, Calcutta, and other places; they carried "altogether 7,135 passengers, and were manned by 1,647 sailors, "making a total of 8,782 persons. There were 34 cases of sickness "at sea and 24 deaths, but no contagious disease.

"Dr. Hassan Effendi Hachem carefully inspected all the pilgrims "landed at Jeddah for the purpose of proceeding thence to Mecca, "and he reported them all to be in perfectly good health. He was "careful at the same time to point out that the public health at Jeddah "was excellent."

M. Bosi urged the importance of the communications made by Messieurs Sotto and Dickson, and insisted upon the conformity between the particulars furnished to the Austrain Delegate by the Austrian consul at Alexandria and the details taken from a report of the Italian consul at Alexandria.

The communication made by the Austrian Delegate surpassed that of Dr. Dickson in detail and precision. In fact, the details given by Dr. Dickson only referred to the Ottoman pilgrims arriving at Jeddah, either from the Egyptian or Arabian cost or from India; but Dr. Dickson had said nothing as to the hygienic condition of the pilgrims. Had there been any deaths or cases of sickness among them, or among the men composing the crews of the vessel carrying them? Nothing was known of the matter; but very fortunately the omission was supplied by the reports of the Austrian and Italian consuls at Alexandria, thanks to which they were informed as to the number of cases of sickness and the nature of the diseases. But the most significant fact was that regarding the English vessels from Bengal, which had touched at Calcutta, and on board which there had been 14 cases of diarrhœa and five of fever. Every man suffering from diarrahœa died.

M. Bosi finally reverted to the proceedings of Colucci Bey, in connection with the Board of Health, over which he presided, and the questions he had put to it. How could this fact be reconciled, with the measures adopted by the Conference since the month of March?

The solemn declaration made to the Austrian Delegate by the Austrian consul at Alexandria might, however, reassure them, for it informed them by the report, dated the 23rd April, that the Egyptian Government was aware of them, and had communicated the measures in question, or, properly speaking, the instructions received by the Imperial Government, to the Sanitary Intendancy of Alexandria.

M. de Krause said he had noted, as well as M. Vernoni and Professor Bosi, the words of the Austrian Delegate, words which, to his mind, had an extensive bearing, and were so important that it became necessary to know whether the Ottoman Delegates confirmed the fact. The Conference had already given its opinion regarding what was to

be done in anticipation of another fresh epidemic in the Hedjaz, so that it could not refer to it to reply to the questions put by Colucci Bey, supposing the Ottoman Government not to have given instructions to the Egyptian Administration in conformity with the measures it had adopted.

Consequently he begged the Delegate of the Sublime Porte to be so good as to say whether the Ottoman Government had made any provisions for the application of the urgent measures.

Mr. Bartoletti replied that he was not sufficiently well informed on the subject to be in a position to give a satisfactory answer to M. de Krause's question. However, he remarked that, as the fact alleged by the Austrian Delegate emanated from an official source, there was every reason to believe that, down to the 22nd April, the Egyptian Government had received from the Sublime Porte instructions based upon the measures adopted by the Conference. M. Bartoletti declared that the assurances given regarding the excellent sanitary condition of Jeddah were calculated to re-assure rather than to alarm.

Salem Bey replied to M. de Krause that the International Sanitary Conference, whose mission consisted in the consideration of questions connected with cholera, and in proposing such means as it thought capable of preserving Europe from future invasions, could only give advice, which the Ottoman Government, like any other Government might accept or reject. But to attempt to make the Ottoman Government state whether it had or had not put into execution the measures proposed by the Conference, or how it had applied or meant to apply them, was an attempt to make the Conference depart altogether from its role and its attributes.

He was of opinion that M. de Krause's proposal to convene an extraordinary meeting of the Conference in the event of cholera breaking out in Egypt would be of no use whatever, considering that the Egyptian Government had already taken and still continued to take all the necessary measures for the preservation of the country from another invasion, or to arrest the progress of the disease if an epidemic should unfortunately happen to break out.

M. de Dumreicher desired to make a motion. This motion, which, at the request of the mover, was reproduced textually, was contained in the following note:—

GENTLEMEN,—The undersigned, the Delegate of His Majesty the King of Denmark, has the honor to submit some considerations to his honorable colleagues with the object of proposing the postponement of the general discussion until after all the questions contained in the programme have been solved, and also to cause the adoption of a slight modification in the economy of these questions with a view to obtaining a decision more in conformity with the mission and character of the Conference.

Our mission comprises in fact a double object. We have in the first place to study the nature of cholera, to seek out the means best adapted to opposing it and preventing its invasions. We have next to discuss the measures that may be proposed in the point of view of practice and execution.

The first part of our task is altogether medical and sanitary; the second is practical and international. In the one medical considerations alone should predominate; in the other it is specially incumbent on the non-medical members of the Conference to consider the measures proposed with reference to their practical application.

If this two-fold object of our mission had not been already indicated by the nature of the things we have to discuss, it would be so still both by the designation that has been given to the Conference and by the quality and various specialities of the Delegates, by whom each Government is represented.

If the only matter in question were to obtain the opinion of science, it would evidently have sufficed to address the learned bodies and academies of Europe—if necessary, even a meeting would have been called of physicians from every country, so as to have a decisive verdict. But it may be said without giving rise to contradiction, that the intention of our Governments was not simply that of calling together a medical congress, and that if some non-medical delegates have been appointed to represent them, it is because they have to discuss the timeliness and the convenience of the measures proposed, and to consider how far they can be adopted, and thus furnish matter for an international act.

The two first parts of our programme contain only purely medical questions, and it would be the same with regard to the third, were it not for the last question which raises considerations of another kind, and which, by itself, deserves a special report. It would be useful, therefore, to place this question in the 4th group, and at the same time to decide on not commencing the general discussion until after the submission of the reports upon all parts of the programme.

This division is not only more conformable to the nature and intention of our orders, but it is also more practical and more to be recommended even in the interests of a useful result to our labors by permitting us to work, without afterthought, at furnishing at least the elements of the solution we seek. We shall arrive at this solution with all the greater certainty in proportion to the care we take to separate the sanitary from the international aspect of our mission.

The medical questions should be discussed by themselves without being in any way influenced by considerations regarding the greater or less convenience of the measures which may result from them. None of us should be placed under the necessity of opposing a sanitary measure or principle, by having the anticipation of its logical conse-

quences being thrust upon us, or by considerations of a totally different kind, which may be brought to bear against its adoption, on practical grounds.

More than one among us must have asked himself the question whether, with the divergence of opinions which must of necessity prevail in such a numerous assembly, it can be hoped that the Conference will arrive at any practical result. Without desiring to deduce prognostics from this which can easily be contradicted by the facts, an argument the more may be found in it in favor of the division urged.

Any way, whatever may be the opinion held upon this head, there can be but one in admitting that we owe it to the high and generous sentiment which presided at the assemblage of this Conference, to do all in our power to afford the most complete solution to the questions put to us.

Let us then allow every latitude, entire liberty, to the medical part of our Conference to form its verdict and lay down its conclusion. And let it be left to each of us to consider afterwards how far they may be accepted or recommended for execution. This mode of procedure will, moreover, have the incontestable advantage of permitting us to submit the various reports to our respective Governments as they are produced, and consequently to place each of us in a position, enabling us to give our opinion with a full knowledge of the subject when the general discussion takes place.

In conclusion, the proposition which the undersigned has the honor to make is framed as follows :—

1*st.*—The last question of the 3rd group commencing with the words, "If, on the one hand, we weigh the inconveniences resulting, &c.," should be placed in the 4th group.

2*nd.*—A special report should be made upon each of the last two groups of questions by Committees appointed *ad hoc.*

3*rd.*—The general discussion upon the various reports and their conclusions should not be commenced until after the submission of all the reports to the Conference.

A. T. DE DUMREICHER,

Delegate of H. M. the King of Denmark.

M. Fauvel, with reference to the preceding note, made the following remarks :—

"I have tried to catch the full meaning of M. de Dumreiche's "proposition, but I have not succeeded in doing so completely. As I understand it, the chief thing resulting from it is in a sort of way

"to cancel all that we have done down to this moment, in a word, to "recommence our labors in order to give them a direction in conformity "with that which has just been proposed. Nor do I comprehend what "Mr. Dumreicher means by general discussion, and I fear that his "proposition, which might have been excellent at the beginning of the "sittings, is not at all *apropos* just now. Strictly speaking, it may be "accepted for what remains to be done, except in regard to judging of "its timeliness. Be this as it may, concluded M. Fauvel, the meaning "of its author cannot easily be apprehended, and I beg M. Dumreicher "will be good enough to put it forward in a less obscure manner."

M. Dumreicher replied that his intention was not to re-do what had been done, and still less to consider it as nothing. His proposition only bore upon what remained to be done, and especially upon the last question of the 3rd group, which question, in his opinion, should be transposed to the 4th group. As for the general discussion, added M. Dumreicher, he meant the discussion which would be entered upon by the Conference, and which would have for its points of departure the reports of the Sub-Committees of the General Committee, and especially the conclusions of those reports.

Dr. Goodeve spoke against the motion of M. Dumreicher. Who, he asked, maintained that the last two questions were not within the competence of medical men? The question in hand was to recommend measures capable of protecting people from choleraic invasions: who then, he would ask, better than physicians, could suggest, advise, and frame sanitary measures of sufficient efficacy to attain that object? Dr. Goodeve thought that M. Dumreicher gave to physicians a much more limited rôle than properly belonged to them.

Count de Lallemand and M. Stenersen were of opinion that the time had not yet come for the discussion of considerations of this nature. They thought that, when the Conference had come to the third and fourth groups, every-body would be at liberty to express his ideas regarding the progress and the track to pursue in the consideration of the questions comprised in those two groups.

Count de Lallemand put this question:—

Does the Conference wish to take M. Dumreicher's note into consideration immediately, or would it prefer to keep it back till the proper time?

M. Salem Bey seconded Count de Lallemand,—but he added that the Conference ought at once to proceed with the discussion of such parts of the general report as were ready.

M. Stenersen reminded the Conference that it had decided not to call a full meeting until the submission of the general report. This decision, he thought, ought to be respected.

MM. Bartoletti and Fauvel said that the general report was not finished. The General Committee were to assemble the next day for

the discussion of the first portion of it. What would be the advantage, added M. Fauvel, of partially discussing a report not yet completed? Was the object to save time? He showed that the Conference would lose rather than save time, for what time it would save would be so much lost to the Committee. It would be better, he thought, to wait for a few days more; the general report would perhaps be completed during the course of the approaching week, and the Conference might convene a general meeting at the end of the week to take it into consideration.

M. Bykow said that he believed that the Conference had met with the object of appointing the Committee or Committees which had to consider the third group. He added that he perceived the necessity existing for the Conference to save time, for it became a matter of greater urgency than ever, now that cholera had appeared in some places in Europe, to hasten their labors. Every Government interested, continued M. Bykow, had a right to expect that the Conference would make practical suggestions adapted to limit the progress of the evil. In his opinion, practical measures were now almost as urgent as those which had been prepared for the Hedjaz. Taking advantage, therefere, of the meeting of the Conference, he proposed the immediate appointment of Committees to enter upon the consideration of the questions of the 3rd group. If the diplomatic delegates, who would take part in these Committees, were not sufficiently convinced by the conclusions of the general report regarding the questions of the first two groups, all they had to do was to ask medical delegates for such information as they needed.

M. Stenersen did not concur in M. Bykow's views. If the Conference had appointed physicians almost exclusively to form the Committee, it had done so simply because the diplomatic delegates understood nothing at all about the questions of the first two groups. The task of the Committee was to draw up a report which might furnish to the diplomatic delegates the elements requisite to permit them to enter with a full knowledge of the subject upon the questions comprised in the 3rd group. Now, the report not supplying these, the situation remained the same, and the non-professional delegates would gain nothing by imperfect and undeveloped particulars. He (Mr. Stenersen) was of opinion that they must submit to the necessity of waiting for the general report before undertaking the consideration of the questions in the 3rd group, unless indeed they wished to compel the diplomatic delegates to submit to and accept blindly the decisions of the physicians.

M. Monlau seconded Mr. Bykow's proposition. Was there an order of the day for that day's meeting, he asked? He believed that the Conference had met with the object of making itself acquainted with the labors of the Committee, and to see whether it was necessary to appoint Committees for the consideration of the questions in the 3rd group. He believed the Committee had terminated its labours, and that nothing remained to be done but the work of revision. Quite

enough time had been lost, and it was requisite that they should put their shoulers to the wheel to make up for it, and therefore he (M. Monlau) heartily supported M. Bykow's proposition.

M. Bosi spoke to the same effect.

M. Segovia, after expressing his concurrence in M. Monlau's motion, stated the reasons which had induced some delegates to request His Excellency Salih Effendi to call a meeting of the Conference.

The meeting, said M. Segovia, was convened with a double object—an enquiry in the first place into the state of the labors of the Committee, and secondly the appointment of Committees upon the 3rd group.

M. Segovia was not aware whether that was the order of the day for the meeting.

M. Bartoletti replied that there was no order of the day. H. E. Salih Effendi had convened the Conference only because some delegates had asked him to do so, but he knew very well that the general report was not yet finished, and that the Conference could not proceed with any thing else until it was submitted.

M. Stenersen suggested the adjournment of the Conference until the entire completion of the labors of the Committee.

MM. VanGeuns, Sawas, and Polak requested that the meeting might be turned to use, if only by the appointment of those Committees which would have to consider the questions of the third group.

M. de Soveral took into consideration the statement made by M. Fauvel, in whose charge the general report was, that it was not yet ready, and he showed that the Conference could not do better than to adjourn till it was sent in.

M. Mühlig observed to M. Monlau that his, or to speak more correctly, M. Bykow's proposition, was in opposition to those passages of the programme which showed the necessity of studying the questions in the two first groups before they could go on to the third, and yet the programme was signed by M. Monlau.

M. Monlau replied that there was no contradiction, and that a reply to M. Mühlig's remark would be found in the preceding minutes.

M. Fauvel submitted a proposal, which he called one of conciliation: The Conference, he said, had imposed on itself a serious task, and consequently it did not hesitate at any sacrifice—every delegate insisted upon the necessity of prompt and especially conscientious action. But as all the delegates were not occupied, and as inaction weighed heavily upon several of them, he proposed the immediate nomination of a Committee charged to *determine the nature, order, and division of the questions* composing the third group.

Count de Lallemand put the following motions to the vote in succession :—

1*st*.—M. Dumreicher's for adjournment: ayes 15, noes 13.

2*nd*.—M. Stenersen's negatived: ayes 13, noes 15.

3*rd*.—MM. Bykow and Monlau's negatived: ayes 13 noes 14.

4*th*.—M. Fauvel's carried: ayes 24, noes 3.

Count de Lallemand proposed to the Conference that the Committee suggested by M. Fauvel should consist of:

MM. Gomez, Goodeve, Monlau, Pelikan, Spadaro, Segovia, Van-Geuns. Carried.

M. de Krause made the following proposal:

"The news we have just heard from the Austrian, British and Italian delegates regarding the sanitary state of a part of the Hedjaz are so far from being reassuring, that the Conference cannot be certain that cholera is not breaking out again this year in Egypt in spite of the measures adopted.

"This state of things," continued M. de Krause, "imposes upon each of us the duty of being attentive, and of not forgetting for a moment that Europe relies upon our foresight. Consequently I have the honor to propose that the President of the Conference shall call an extraordinary meeting as soon as he hears of the appearance of cholera, either in Egypt or in Syria.

"In this way the Conference will find itself in a position immediately to adopt measures capable of arresting the evil, and preserving Europe."

MM. Pelikan and Van-Geuns considered M. de Krause's proposition useless. If the Conference were not to be assembled until after the outbreak of cholera in Egypt or in Syria, the measures it might adopt would come very tardily.

M. Bosi believed that it would be well to fix a day for the next meeting of the Conference, so that it might receive the news in time, and receive full information as to the measures adopted by the Sublime Porte, and the instructions transmitted by it to the Egyptian Government.

M. Bartoletti was of opinion that the Conference had no right to call upon the Ottoman Government to state the measures adopted by it, or which it proposed to adopt in the event of cholera breaking out in Egypt. The Conference fulfilled the orders given to it when it communicated the measures adopted by it to the Imperial Government,—any further proceedings concerned the Imperial Government alone.

M. Stenerson confessed his inability to understand the anxiety of some delegates with regard to Egypt. Could not cholera break out elsewhere; and, if it could, ought not the Conference to be as anxious about it as if it made its appearance in Egypt or Syria?

Dr. Goodeve expressed his fear of seeing the Conference invested with the character of *sanitary police*. Every Government, he said, had its Board of Health, the functions of which were those which had been said to be made over to the Conference. But the Conference, continued Dr. Goodeve, had a very different mission, and it was sufficient to recall to mind the circular of His Excellency M. Drouyn de Lhuys to be persuaded that an attempt was being made to cause it to depart from the role prescribed by that circular.

M. Bartoletti informed the honorable Conference that the Ottoman Sanitary Administration had already adopted preventive measures. It had fixed a quarantine of 15 days, exclusive of the period of the voyage, for every choleraic arrival ; and it had already decided as to the localities and number of the quarantine stations which were to be fixed in six different places.

M. de Krause begged that the Conference would not think that his proposition had any other object in view but that of keeping it *au courant* of events.

M. Dumreicher opposed the proposition for fear of infringing upon the functions of the permanent sanitary authorities.

MM. Vetsera and Sawas concurred with Mr. Dumreicher, failing to perceive, as they said, either the necessity or the object of convening an extraordinary meeting of the Conference.

M. Bartoletti, on the other hand, declared that there was no inconvenience in an extraordinary meeting of the Conference for the purpose of being made acquainted with news of present importance.

M. Stenersen was of opinion that the Conference, if it wished to act in conformity with its previous decisions, ought to accept the proposition submitted by M. de Krause.

M. Fauvel supported M. de Krause's proposition. That proposition, he said, only required an extraordinary meeting of the Conference in the event of cholera breaking out in Egypt or Syria, with the object of hearing the reports, of suggesting measures, and also of deciding, if necessary, upon some arrangements with regard to the epidemic. It was possible, said M. Fauvel in conclusion, that, if cholera broke out in Egypt, the Egyptian Sanitary Administration would ask the Conference for its advice, and perhaps consult it as to the measures to be adopted. If that were to happen, the Conference would find itself, thanks to M. de Krause's proposition, furnished with the necessary information.

M. Bartoletti said he deemed it his duty to withdraw all he had said in support of M. de Krause's motion, because it had become overloaded, and had lost its primitive simplicity. M. Bartoletti declared that he would vote against this proposition.

M. Sawas made the same declaration, because he considered the Conference incompetent.

Count de Lallemand put M. de Krause's motion to the vote.

It was adopted by a majority of 15 to 12.

On the motion of several Delegates, the Conference decided not to fix any day for its next meeting.

Order of the day for the next meeting:—

1*st*.—Submission and perusal of the report of the Committee appointed to consider the third group of the programme.

2*nd*.—Submission and perusal of the general report of the general Committee.

The meeting terminated at 6-30 P. M.

COUNT DE LALLEMAND,
President of the Sanitary Conference.

DR. NARANZI,
BARON DE COLLONGUE, } *Secretaries.*

No. 9.

INTERNATIONAL SANITARY CONFERENCE.

Meeting of the 28th May 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its ninth Meeting at Galata Serai on the 28th May 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health in Spain.

For the Papal States:

Monseigneur Brunoni, Vicar-Apostolic.

Dr. Ignace Spadaro.

For France:

Coun' de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physican.

For Great Britain:

The Hon. W. Stuart, Secretary to His Britannic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargéd' Affaires.

Councillor Dr. Bernardino Antoni Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to his Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

For Egypt:

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-mother of His Highness the Viceroy of Egypt.

The Meeting commenced at 1 P. M.

Dr. Naranzi, one of the Secretaries, read the minutes of the eighth meeting.

After the adoption of the minutes, Dr. Sawas offered to lay upon the table the manuscript of the speech he had read at the fifth meeting, and which, according to M. Fauvel, could not have been read as printed. Every member of the Conference could assure himself that the imputation was altogether unfounded. It would be seen, on the one hand, that the paragraph which had given rise to M. Fauvel's protest, and which would be found to be struck out in the manuscript, did not appear in the printed text. Perhaps, moreover, Dr. Fauvel

might not, in his speech, have made use of the exact words—"that "the French Delegates had rejected all other means that could be "proposed, which had been done to prove that everything had been "considered;" but at any rate such was most positively the meaning of his words: the idea, if not the words, was there, and this was what was important not to pass by unanswered.

With regard to the passage relative to the route followed by the pilgrims on their return from Mecca, which had been pointed to as having been modified after having been read, Dr. Sawas said he was afraid the minutes were not of a nature to allow of the existence of any doubts as to the manner in which he had replied. He had frankly taken up the question, and he maintained the reproach he had cast at Dr. Fauvel of having been ignorant of the route of the pilgrimage: the Mussulman religion imposed upon the hajjis the obligation of visiting Medina, and it was a fact of constant occurrence that from Bader they all and always went to Medina, in spite of the difficulty and length of the road.

Dr. Fauvel, in reply to M. Sawas, said he regretted that he had thought it necessary to revert to this incident, but the minutes appeared to him to have said everything that was necessary, and said it well. In regard to the first point in dispute, any body who would read his speech in good faith would admit that the Delegates of the French Government had never pretended to reject all projects beforehand, and without discussion; it would, therefore be superfluous to say anything further upon this head. As for the route of the pilgrims, Dr. Fauvel remarked, in the first place, that this part of M. Sawas' speech was not written when it was spoken, and that the text was not made over to the secretaries until some days after the meeting: the manuscript he proposed to produce could, therefore, be no proof. However this might be, he (Dr. Fauvel) had asked, and he asked still what was the geographical error he was accused of having committed? Did the pilgrims from Jeddah to Bader follow another route than the one he had indicated? Did not this route bifurcate at Bader? was it not necessary for the Egyptian pilgrims, after quitting Bader, with the view of returning to their country, to take the coast route; while, on the contrary, the pilgrims going to Syria had to take the road crossing the mountains, and finally pass via Medina? M. Fauvel had never denied that a certain number of the pilgrims went to Medina, but he maintained that it was not obligatory to do so, and that a very large number did not go. It was not forgotten that Bader was only a day's march from Yambo; and that, according to the Persian plan, this port would remain open. Now, as only the Egyptian pilgrims were in question, was it not natural that, being attacked by cholera, and being so close to Yambo, they should desire to embark there rather than go to Medina, and return again by the same route they had taken going?

Dr. Sawas desired to speak, but Dr. Bartoletti and a great number of members insisted upon the discussion being brought to a termination. His Excellency Salih Effendi declared therefore, after

having consulted the Conference, that the subject must be dropped, having been sufficiently discussed, and the Conference pass on to other matters. Dr. Sawas protested that it was thus rendered impossible for him to reply and defend himself, and he relied on mention of the fact being made in the minutes.

M. Vetsera communicated to the Conference some sanitary information received from Egypt. On the 18th May, 6,219 pilgrims had landed at Suez; 2,000 had already re-embarked at Alexandria. A strict surveillance was kept up in the first of these ports under the direction of the Egyptian authorities, and no cases of suspicious disease had been observed. The sanitary condition of Egypt was satisfactory. Prudent precautionary measures had also been taken at Mecca and in the Holy Places.

Salem Bey also furnished some details regarding the measures prescribed in Egypt, by the Egyptian Sanitary Administration; and in Arabia, by the Ottoman authorities. These particulars were extracted from the minutes of a meeting held on the 16th May by the Superior Board of Health at Alexandria. This document also mentioned that the public health in Egypt was good.

Dr. Bartoletti entered into some particulars as to the results of the mission confided to the Ottoman Medical Commission sent into the Hedjas. The reports of this Commission proved that nothing had been neglected which could contribute to the improvement of the hygienic conditions of Mecca, and particularly in the valley of the Mina, where the sacrifices were performed. At Mecca, the cisterns had been cleaned as well as the sewers and ditches. The water of certain springs had been reserved for drinking purposes, and, contrary to the custom formerly observed, the same water was no longer used for this purpose, as well as for ablutions and the watering of animals. In the valley of the Mina, 45 pits had been dug for the interment of the animal remains; 500 necessaries had also been prepared. Sites had finally been chosen at a certain distance from the encampments for the opening of excavations, intended for the slaughtering of animals, others for their shelter, and others again specially reserved for the retailers of provisions. Eighty-eight ships had, moreover, brought 12,662 pilgrims; as for the number of hajjis, 21,500 had been counted before the Bairam. The ships had been carefully visited on arrival, and no cases of cholera appeared to have occurred. Similarly, at the time of departure, care was taken that no ship should carry, as had occurred formerly, too great a number of pilgrims at a time. The Turkish Delegate stated, moreover, that his Government had sent a Special Commissioner to Mecca, charged with instructions for the Governor of the Hedjaz and the Grand Sherif of Mecca, prescribing the application, as far as possible, of the measures decided upon by the Conference.

Dr. Dickson having reminded Dr. Bartoletti of the promise he had made in Committee to communicate to the Conference the reports of

the Medical Commission of the Hedjaz, the Turkish Delegate replied that all these reports had not yet been translated, but that the Conference would, in good time, receive all such information as would be of interest to it.

Dr. Mühlig said he had found himself in a position to procure information, the correctness of which he did not pretend to guarantee, but which had been imparted by a Mussulman on his return from Mecca, and which seemed to him, therefore, to be of some interest. All the pilgrims, it seemed, were unanimous in praising the well-devised measures taken by the authorites of the Hedjaz, but less credit was given to the proceedings of the Egyptian Sanitary Administration. From Suez, the pilgrims it seemed, were sent back to the place called the Springs of Moses, to be visited there by medical officers deputed *ad hoc*; there it was necessary for them to wade in the sea in order to gain the shore, which was arid, and without water or shade; and it was in these bad conditions that they had to wait, and sometimes for a long time, for the arrival of the medical officers, who had to visit them. According to the statement of the person from whom Dr. Mühlig had received this information, no case of cholera, but only some cases of dysentery, had occurred at Mecca.

Dr. Salem Bay explained that it was only from an excess of precaution that pilgrims arriving at Suez were sent to the Springs of Moses, an hour's march distant. It was true that there was no roadstead at this place, and that ships had to anchor at a considerable distance from shore, but no other inconvenience was caused to the pilgrims by this than that of being compelled to have recourse to boats for the purpose of landing. From the shore to the Springs of Moses was little more than half an hour's walk: the place was shady, and was abundantly provided with water. Most of the pilgrims had gone there and had been immediately visited; some of them had taken shelter there, and Dr. Mühlig's informant must have been one of those who did so. These last were naturally obliged to wait until the physicians had accomplished their visit to the Springs of Moses.

Dr. Bartoletti laid upon the table the report (annexure No. 1 to the present minutes) of the Committee appointed to consider the two first groups of the programme, of which he was the president, and also the minutes of the twenty-six Meetings held by the Committee, as well as the reports of the Sub-Committees between which the work had been divided.

The submission of the reports, &c., was recorded, the discussion upon them being postponed in order to allow members, who had not been on the Committee, time to study this important document.

M. Segovia, President of the Committee nominated for the preparatory consideration of the questions in the third group of the programme, also presented the report containing the result of its labors

(annexure No. 2). M. Segovia asked for the immediate commencement of the discussion upon this report, which was read by Dr. Monlau at the request of its author, Dr. Pelikan.

Dr. Polak thought that the report ought to be accepted as it stood, members being at liberty, however, to add such questions afterwards as might be shown, after discussion, to be useful.

Mr. Stuart requested the elimination of paragraph 20, (3rd section) regarding the despatch to India of a scientific Commission, with the object of making a local study of cholera in those places where it was said to have been generated. This paragraph might be amended as follows: "To call the attention of the respective Governments of the countries believed to be the birth-places of cholera to the utility of undertaking or continuing vigorous local researches as to the origin and propagation of the disease.

"To enumerate the questions, the solution of which, or a greater acquaintance with which, is required by science."

M. Segovia and Dr. Monlau said they would reply to Mr. Stuart later; for the time the discussion should be confined to the general division of the report. Questions of detail would come on afterwards, and the Committee would be found ready to consent to all such modifications and additions as might be deemed useful and necessary.

Dr. Fauvel approved of the division, which he thought good in itself, but with certain modifications however: the 3rd section notably was not conceived in the spirit of the intentions of the Conference; it ought to be more extended, and should contain a consideration of the measures adapted to prevent renewed invasions of Europe by cholera.

Dr. Mühlig was opposed to the division into three sections. Two were enough: the first should treat of prophylactic measures, or of preservation in general, and ought to be sub-divided itself into two sub-sections,—1st hygienic measures, 2nd quarantines. The dominant question of the 1st section would be that of disinfection, *i. e.*, the destruction of the choleraic germ whenever it was imported. The 2nd section would comprise everything connected with the application of measures of preservation—1st to those countries in which cholera was generated, 2nd to the intermediate countries, and 3rd to Europe.

Dr. Dickson gave the work of the Committee his approval. The 20th paragraph of the 3rd section only seemed to him, as it did to Mr. Stuart, to require suppression or modification.

Dr. Fauvel said he agreed in opinion with Dr. Mühlig as to the collection into one group of all measures of preservation in general.

M. Segovia objected that a single Committee could not discuss all the questions raised by the consideration of the third group of the programme. It ought necessarily to divide itself into Sub-Committees, and necessarily too, the same Sub-Committee which would take up the

subject of measures of hygiene could not charge itself at the same time with measures of quarantine. That alone would be an obstacle to joining the two first sections into one single section.

Dr. Mühlig replied that the important point to be sought after and discovered was a logical division of labor. The question of the Committees to be appointed was a secondary one, and need not be taken into consideration.

Chevalier Pinto de Soveral was in favor of division into two sections.

Count de Lallemand also spoke to the same effect.

Dr. Monlau said that the Committee had confined itself to classifying, as logically as possible, the questions contained in the third group of the programme as the programme stood after adoption by the Conference. Between purely hygienic measures and restrictive or quarantine measures, there were differences which required their separation into two sections; then there remained the question of the pilgrimage, which required a third. The Committee had not bound itself to follow the order of the programme, and the Committees that would be appointed ought no less to have the same latitude, and be even at liberty to introduce new questions if necessary.

MM. de Krause and Stenersen suggested the postponement of this discussion: it was necessary that everybody should have time to properly consider Dr. Mühlig's proposal.

Dr. Pelikan defended the division into three sections. The question of quarantines, which comprised the consideration of the changes which it would be advisable to make in the sanitary laws in force in various states, was of such importance that they could not possibly help making it the subject of a special group. The matter in question besides was simply whether the division proposed by the Committee was logical, and whether it accelerated the progress of the work, which was the object in view.

Professor Van Geuns spoke to the same effect: the division into three sections would, moreover, in his opinion, possess another advantage *viz.*, that of utilising the special aptitude of certain members of the Conference, and which would find their places marked out for them in the Sub-Committees, which would have to consider each of the three sections. The Dutch Delegate believed, also, that it would result in a clear saving of time. It seemed to him that at most there could be no very great difference between the division proposed by the Committee, and that proposed by Dr. Mühlig.

Professor Bosi thought himself bound also to support the conclusions of the Committee. The prolongation of this discussion would tend to defeat the object proposed in appointing it; too much importance was given to questions of classification, and, far from saving time, it

was only lost. The Committee had declared itself ready to accept modifications in detail, so they might proceed immediately to vote upon the question of the general division.

Count de Lallemand believed, on the contrary that a good classification was of the greatest importance. He thought that Dr. Mühlig's was excellent, and he did not think, as some people appeared to do, that it upset the work of the Committee.

Dr. Lenz could not see what advantage it would be to divide, in the work, the *consideration* and the *application* of prophylactic measures. These questions had already been studied by each of the members of the Conference, whose mission, moreover, it was not to write *theoretical treatises* upon prophylactic measures. What they should occupy themselves with was the *application* of these measures, taking for their basis what had been learnt by experience, and also the studies previously made in connection with the two first groups of the programme. Dr. Lenz, and with him Dr. Bykow, gave their opinions in favor of the division into three sections, *viz.*—1st, hygienic measures in general; 2nd, quarantine measures in general; and 3rd, special hygienic and quarantine measures for countries believed to be the birth-places of cholera. The Russian Delegates begged the President to put it to the vote.

Dr. Sawas made the same request; if the division adopted by the Committee were rejected, it would be a proper time to discuss and divide upon that of Dr. Mühlig.

M. de Krause still thought it would be preferable to postpone division till a future meeting.

M. Kalergi concurred in this view.

Dr. Fauvel thought they should so act as not to adopt a bad classification. The consideration of the two first groups of the programme would have taken up much less time if it had been preceded by serious preparatory consideration with the object of securing a better division of work. The result was that the same question had been discussed by several Committees simultaneously. The division recommended by Dr. Mühlig would obviate this inconvenience. It was true, as Dr. Lenz had said, that opinions had been definitely formed regarding prophylaxy, but it was still a matter of importance to make them known. On their arrival at a profound consideration of preservative measures in general, questions of application would no longer give rise to great difficulties. The division into two sections after all did not sensibly differ from that proposed by the Committee, inasmuch as Dr. Mühlig sub-divided his first group into two sub-sections.

The termination of the discussion being again called for from various quarters, Dr. Fauvel said he was ready to vote for the three sections if the Committee would consent to the modification of the headings of the sections.

Dr. Bartoletti said the same.

Count de Lallemand thought that the proposal to be voted for might be thus framed: division of the third group of the programme into three sections, with the modification of their headings, if found necessary.

Professor Bosi requested with Dr. Monlau that the division proposed by the Committee should be put to the vote as it stood. Afterwards, during the discussion of the various sections, it would be seen whether it would be advisable to change their headings.

M. Stenersen insisting that the Conference should first of all be consulted as to the question of postponement, the motion was put to the vote. The Conference decided against adjournment by a majority of 17 to 4.

The division proposed by the Committee, *viz.*, the distribution of the questions contained in the third group of the programme into three sections, was then put to the vote by His Excellency Salih Effendi, and adopted by a majority of 13 to 8.

A discussion was then commenced regarding the titles to be given to the three sections, but it was almost immediately interrupted, at the request of a portion of the assembly, after the exchange of a few words between Drs. Fauvel, Monlau, and Mühlig.

M. Kalergi proposed that, in future, an earlier hour should be fixed for their meetings. They might meet at noon, and separate at half-past four.

The Conference agreed to the proposal, and then adjourned to Thursday, the 31st May, at noon.

The meeting terminated at 5.30 P. M.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE, DR. NARANZI, } *Secretaries.*

Dated 21st July, 1866.

From—E. HAMMOND, Esq., *Foreign Office,*

To—The Under-Secretary of State, India Office.

I am directed by Lord Stanley to transmit to you, to be laid before Viscount Cranborne, the accompanying copy of a Despatch* from the British Cholera Commissioner, containing a further report of the proceedings of the Cholera Conference at Constantinople.

* No. 27.

No. 27, dated 10th July, 1866.

From—MESSRS. E. GOODEVE, and E. D. DICKSON,

To—*The* EARL OF CLARENDON, *K. G.*, &c.

We have the honor to inform your Lordship that the discussion of the report of the "Commission Pleniere" on the first and second groups of the programme, was closed at the meetings of the Cholera Conference held on the 3rd instant. Only very slight alterations have been made since our last report to your Lordship.

On the 5th instant the Conference heard and adopted the report of the Sub-Committee appointed to trace the history of the epidemic of 1865. The sketch was drawn up by Dr. Bartoletti, and agreed to by the Sub-Committee, with the exception of its President, Dr. Goodeve, who reserved his assent to a portion of the report which asserted, according to his opinion, much too strongly, the probability of cholera having been introduced into the Hedjaz directly by pilgrims from India. At the meeting of the Conference Dr. Dickson joined with Dr. Goodeve in making the same reserve. The document is at present only in manuscript, but as it will be printed shortly, we shall be able to forward copies to your Lordship.

We regret that owing to the unfortunate destruction by fire of all Dr. Dickson's household furniture, books, and papers two days before the departure of the last mail, we were unable to forward by it any copies of protocols, triple copies of Nos. 10 and 11 collected by him for the purpose were destroyed, and we were unable to obtain a supply of fresh copies in time to replace them. We hope to forward them by the next messenger.

We are sorry to report that the following books and papers supplied to the Commission were also destroyed by the same fire :—

Persian Gulf correspondence. Bombay Government, Drs. Baly and Gull's report on cholera. Report of cholera epidemic of 1861, in the North-Western Provinces of India. Paris Sanitary Convention of 1851, Buchanan's report on the cholera in Russia. Copies of some of our later despatches forwarded to the Foreign Office. The Registry of our correspondence, and the instructions given to us on our appointment by Lord Clarendon; and also those concerning the return of Indian pilgrims from Mecca. We beg the favor of being furnished with a copy of these instructions.

We cannot at present remember what was the number of our last report, but we believe it to have been 26. We will, therefore, with your Lordship's permission, reckon our future reports from that number.

Dated 28th July, 1866.

From—E. HAMMOND, Esq., *Foreign Office*,

To—The Under-Secretary of State for India.

I am directed by Lord Stanley to transmit to you, to be laid before Her Majesty's Secretary of State for India, the accompanying copies of Protocols* of the Proceedings of the Cholera Conference at Constantinople which have been received from the British Cholera Commissioners.

* Nos. 10 to 15.

No. 10.

INTERNATIONAL SANITARY CONFERENCE.

Meeting of the 31st May 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its tenth meeting at Galata-Serai, at noon of the 31st May 1866.

PRESENT.

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to H. M. the Shah of Persia.

For Belgium:

The Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

The Honorable M. W. Stuart, Secretary to H. B. M.'s Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to H. B. M.'s Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary of His Hellenic Majesty's Legation.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor of the Legation of H. M. the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp General to H. M. the Shah, Councillor of H. M.'s Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health, Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, 1st Physician to His Most Faithful Majesty.

For Prussia:

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Hospital of the Ottoman Marine.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, College Councillor, attached to the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to H. M. the King of Sweden and Norway, Secretary to H. M.'s Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Service, Member of the Superior Council of Health of Constantinople.

For Egypt:

Dr. Salem Bey, Professor of Clinical and Pathological Medicine at the School of Medicine at Cairo, Special Physician to the Princess-mother of His Highness the Viceroy of Egypt.

His Excellency the President accorded permission to the Secretary to speak for the purpose of reading the minutes of the last meeting.

M. de Collongue, one of the Secretaries, read the minutes of the meeting of the 28th May. The manner in which they were drawn up was approved.

His Excellency the President announced that the order of the day was the continuation of the discussion of the report regarding the 3rd group of the programme.

Count de Lallemand asked to be allowed to speak before the commencement of the discussion on the report in question, which he would not like to interrupt. He wanted to make a communication.

Permission being given, Count de Lallemand read the following proposition, which he made in the name of the Delegates of the French Government.

"GENTLEMEN,—We, the undersigned, the Delegates of the Government of His Majesty the Emperor of the French, have the honor to invite the attention of the Conference to a question which is not entered in the programme of its labors, nor comprised in any direct or necessary way within the circle they embrace, but which is not without

interest for the public health, and, in consequence, cannot be set aside with indifference. We wish to speak of the tariff of sanitary dues levied in the Ottoman ports to meet the expenses of the sanitary administration.

The tariff as it exists and is at present levied is old and does not answer the purpose. Established at the very origin and foundation of the sanitary administration in the ports of the Empire, that is to say, at a period when quarantines were the constant or almost constant rule of the service, and consequently the chief source of its receipts, now that quarantines have become the exception, the realizations from it are not enough, not having exceeded about a fifth of the total expenditure for several years past.

This state of things is not only irregular in itself and unjust to the Turkish Government, which has always complained of it, but it is also compromising to the sanitary administration, and may become greatly more so if prolonged, for nobody can be surprised if the Government should end by neglecting an administration almost the entire charge for which has to be met by it, while at the same time only its own quota of the common expense ought to be borne by it. Moreover, a special administration like this ought always, it is evident, for greater security, to be able to reckon upon suitable and special resources.

Ten years ago an attempt was made by the Sublime Porte to obtain the reform of the sanitary tariff. This attempt fell through, for reasons of which we are ignorant. But last year a Committee of seven members of the Superior Council of Health, after careful study of the matter, drew up a new project of reform, based upon the necessities of an average administrative year and on the probable receipts, and consequently in conformity with the principles laid down by the Paris Conference of 1851, by virtue of which sanitary duties can never constitute a tax, but merely a reimbursement of expenditure. This project, which will be found in detail in the annexed report under date the 18th February 1865 (see the end of the minute) was communicated to the Governments of the various maritime nations, and they, we believe, have declined to agree to it.

The Government of the Emperor, after a careful examination of it, has authorised us to state that it will not oppose its being taken into consideration and adopted as the basis of a reform, the necessity of which it admits. Without raising any positive objection against the tariff of 26 paras. (14 centimes) per registered ton, which is proposed in this project as equitable, it recommends that sanitary duties should be rendered as light as possible for navigation.

We are authorized, moreover, to bring this matter to the notice of the Conference, and to beg it to pronounce its opinion, and to give expression to its wishes in any way which it may deem most useful and just. We trust that these wishes, thanks to the authority attached to the deliberations of this assembly, will have a happy influence on the conclusion already too long delayed of a question not to be treated with neglect.

We beg, therefore, gentlemen, that you will take our proposition into consideration, and appoint a Committee for the purpose of examining and reporting upon it, authorising this Committee to base its examination upon the labors and the report of the Superior Council of Health recorded in the annexed Report of the 1st February 1865. We think it would be useful if the Committee were to comprise one or two of the members of the Superior Council of Health, who took part in the discussion of the project to which we refer."

A. DE LALLEMAND.
FAUVEL.

After this communication had been made by Count Lallemand, several speakers put their names down in the list to speak on the subject.

M. Stenersen, after having endeavoured to demonstrate: 1st, that the proposition of the French Delegates was not urgent: 2nd, that it had no direct connexion with the chief end of the assembly of the Conference; that it would interrupt the progress of its labors, and particularly the study of the report which ought to serve as a basis for the deliberations of the Conference; insisted that the Conference was not competent to occupy itself with a question which was beyond its province, and which could not be taken into consideration without special authority from every Government represented in the Conference.

M. Stenersen brought forward the following considerations in support of his view:

"One most serious consideration," he said, "ought, in my opinion, to prevent us from taking up at present the French proposition, *viz.*, that it appears to go beyond the limits of our competence, at least as they are understood by me and by my Government. This assembly has met with the sole object of seeking out means of preservation against cholera. But the means it is about to propose must of necessity, if it accepts the new proposition, entail certain expenses upon the Governments subscribing to it. These expenses can in no way be considered as in themselves constituting means of preservation, and therefore the question of ascertaining how these expenses are to be met does not constitute a sanitary question. The whole proposition refers simply to a new tax on foreign navigation in Turkish waters.

"Now," continued M. Stenersen, "every impost of this nature has always been regulated by diplomatic negotiations—negotiations frequently long and complicated—between the Turkish Government and the foreign missions at Constantinople. And I am not aware that the Conference has been authorised, in regard to this special case, to occupy the place of the missions. Nor without such authority, are we, in my opinion, called upon to occupy ourselves with the question of quarantine duties in Turkey any more than we would have been, at the time of its discussion, called upon to take up the question of light-houses.

"Our incompetence in regard to this subject," continued M. Stenersen, "will be more easily apparent if we were to imagine that we were about to commence the discussion here, without special authority, of the tariff of quarantine duties to be paid by foreign vessels in any country whatever, for instance, in French ports. I believe that the French Government would find such a discussion to be somewhat irregular, for it would relate to a question of internal administration, and it would certainly refuse to accept our decisions, even if they carried with them an increase to the duties already levied. Now, in my opinion, what the Conference could not do with regard to any other country, it cannot do with regard to Turkey. For, whatever may be the position of the Sublime Porte with reference to other Governments, it is in any case evident that the Conference is in exactly the same position with reference to the Ottoman Government that it is with regard to every other Government represented here.

"I am not aware," said M. Stenersen in conclusion, "of what instructions the other Delegates sitting in the Conference may be in possession, but for my part I have to state that my instructions, as well as those of my colleague, Baron Hubsch, do not permit us to enter upon the discussion here of any but sanitary questions. We are obliged, in consequence, to abstain from discussing the proposition of the Delegates of the French Government until we have asked for special instructions from our Government on the subject. Considering all that I have had the honor to bring forward," concluded M. Stenersen," I allow myself the liberty of proposing as follows to the honorable Conference:—

"That the discussion of the French project shall be adjourned—that the said proposition shall be printed and communicated without delay to all the Delegates, so that those who think it necessary may be able to obtain the orders of their respective Governments on the matter."

M. Kalergi was of opinion that the communication of the French Delegates was so important that it was necessary to be in possession of special instructions to take it into serious consideration. At the same time, he said, we might occupy ourselves with it in a certain point of view, if only to give our opinion on this important question. But we are not authorised, he observed, to take up a question which in the greatest degree affects the marine of my nation, which, it may be said by the way, already pays very high sanitary dues—dues which it is here proposed to increase.

M. Kalergi submitted the following proposition:—

"That the communication of Count de Lallemand shall be taken into consideration, and placed among the questions of the third group."

Dr. Goodeve said he thought the Conference incompetent to occupy itself with the proposition of the French Delegates, and as he had not received special instructions, he could not take the proposition into consideration.

Dr. Dickson, agreeing as to the incompetence of the Conference, entirely supported M. Stenersen's proposition.

M. Vernoni spoke as follows:—

"I regard the proposition brought forward by Count de Lallemand to be very equitable in principle, but I think that, being a question connected with matters of administration, it does not come within the province of the Conference, but that it properly belongs to the Superior Council of Health of the Ottoman Empire, which Council moreover has studied it, and comprises Delegates of foreign powers in its body. This communication would have found its proper place after the adoption of the new sanitary measures which the Conference will at the proper time be called upon to recommend to the Government of the Sublime Porte, in regard to the Red Sea and other places. Then we would have to see whether an increased tariff of duties should weigh exclusively upon navigation, or should rather be distributed otherwise."

H. E. Salih Effendi, after having thanked the Delegates of the French Government for the initiative they had been good enough to take in regard to the question of sanitary duties—duties which at the present moment are scarcely in proportion to the expenditure which the Ottoman Government has to meet from its own resources alone without assistance and contrary to every principle of equity—invited his colleague, Dr. Bartoletti, who, he said, was much more competent than himself in such matters, to give the fullest information with regard to this important question. For my part, said H. E. Salih Effendi, I confine myself to observing that the sanitary administration of Turkey is very probably about to be doubled; that consequently there will be an enormous increase of expenditure in that administration, and this expenditure, without a reform in the tariff, would have to be met exclusively by the Imperial Government. This reform, His Excellency thought, should be effected on the basis of the principle laid down by Count de Lallemand.

MM. Pelikan and Lenz stated that the Delegates of the Russian Government were not in possession of the necessary instructions to take the communication made by Count de Lallemand into consideration, and that without receiving fresh instructions, they were unable to decide as to the question brought forward by the Delegates of France or to enter upon questions relating to the sanitary duties imposed in the Ottoman Empire.

M. Bykow, on his side, stated in his capacity of delegated physician from the Ministry of War, that he had been clearly and explicitly told by his Government not to discuss any questions but such as were directly connected with the study of cholera, and the measures to be adopted against that disease. Consequently, he said, I declare that I have no power or right to take part in discussions concerning the sanitary taxes, and my opinion, on this account, could be of no value to my Government. M. Bykow added that such matters, according to his view, could be discussed only by diplomatic Delegates or other persons *ad hoc*.

M. Vetsera spoke as follows :—

" As a member of the Imperial Internonciature, special information which I possess gives me a claim to know and to say that the question of the quarantine tariff is in negotiation between the Imperial Government and the Sublime Porte. In my capacity of Delegate to this Conference, I have no instructions to occupy myself with the discussion of a question which is already being negotiated through the proper channels. The Conference cannot take the matter up except by special authority, which, in my opinion, should be obtained by means of direct steps taken on the part of the Sublime Porte with regard to the Governments represented in the Conference."

M. Sotto brought forward the following proposition :—

" That the International Sanitary Conference declares its incompetence to enter upon the proposition of the French Delegates."

Mr. Stuart concurred entirely with M. Vetsera, and regarded the matter from the same point of view as that gentleman. I deem it right, he said, to state that I agree unreservedly with the opinion and remarks of my honorable colleague, M. Vetsera. We have no more power, he added, to enter upon the question of the tariff so far as Turkey is concerned than we have for any other power of Europe—and the doing so would constitute an administrative interference, which is prohibited by the circular of M. Drouyn de Lhuys. I am opposed therefore, said Mr. Stuart in conclusion, to taking the French proposition into consideration.

Dr. Bartoletti thanked the Delegates of the French Government for the initiative they had just taken in the matter of the Ottoman sanitary tariff. He thanked them in his own name and the name of his colleague who represented Turkey. He did not wish, he said, to reply at present to the objections raised against the principle of this proposition, reserving that for a fitter opportunity, but he thought it right to make some remarks which might properly be made then.

Some of the members of the Conference, said Dr. Bartoletti, were of opinion that that assembly was not competent to enter upon the question of the tariff, because the question was not one of sanitation, and because their orders limited them to matters regarding cholera. Others again thought they could not discuss the tariff without special instructions to that effect. He did not dispute the right of those who thought it necessary to ask for instructions from their Governments, but this, he thought, ought not to prevent them from receiving the French proposition. As for the incompetence of the Conference, it was a great mistake to urge this argument; and, if the French Delegates had not taken the initiative, the Turkish Delegates would have brought the proposition forward in connexion with the measures to be adopted against cholera. In fact, the question of the Ottoman tariff was so intimately connected with the entire collection of the measures to be proposed, that the execution of any measure was impossible except with this condition.

"Why" said Dr. Bartoletti, "it is proposed to set up a solid barrier, serious guarantees, against the invasion of cholera. Turkey has to assume the responsibility of the most laborious and the rudest part of the common task; and the Conference tells it—Bear the expenses—the question is not a sanitary one!" Dr. Bartoletti was obliged to say, almost *officially*, that, at this rate, the Ottoman Government would decline singly to support the burthen of a charge incumbent on all; he was of opinion that the Conference was working fruitlessly and needlessly in proposing measures which would not be carried out for want of means.

However, he hoped, in conclusion, that this dangerous path would not be followed, and he proposed to the Conference to receive the proposition of the French Delegates, and to give time to those who thought it necessary to be in possession of instructions to ask their respective Governments for them.

Salem Bey said that all the Delegates were agreed as to the equity of the principle upon which the French proposition was based. The opposition of some Delegates arose, he thought, from the want of instructions, and not from any other cause, for the necessity of reforming the tariff of the sanitary duties of the Ottoman Empire was admitted by all. This question, he added, interested all Europe, and on its solution depended the success of the labors of the Conference. It was a matter of urgency then, he thought, to ask for authority to enter upon and discuss the subject. Meantime, until every body was furnished with the requisite authority, he proposed that a Committee should be appointed for the examination of the question—and when the time arrived to bring it before the Conference, those who thought it necessary to have special authority would probably be in possession of it.

Count de Lallemand said he was in no way opposed to the proposition of M. Kalergi. The Delegates of the French Government only ask for a very simple thing—let the Conference first receive their communication, and afterwards decide upon it as it pleased. But, in regard to M. Stenersen's observations, Count de Lallemand was under the necessity of reminding him that the view he took of the matter in regard to Turkey was not correct. In fact, the position of Turkey was altogether exceptional, and that position, which was created for her by articles of capitulation, destroyed all comparison between her and the other European powers. M. Stenersen forgot that Turkey was unable to appropriate any sanitary dues without the concurrence of the European powers, and only by the intermediate agency of their consuls. It was not correct also to think that sanitary dues did not concern the public health. On the contrary, these two questions were intimately connected. For the protection of the public health, it was necessary to take precautionary measures of security, to prevent, in short, measures entailing great expenditure as their consequence. This expenditure could only be derived from sanitary dues. But these dues, according to the tariff in force were greatly inferior to the amount of expenditure, and Turkey was, against all justice, greatly burthened thereby.

The question then reduced itself to this: Without the desired resources, we cannot have a perfect and satisfactory sanitary administration: the tariff established in 1840 is altogether insufficient: It is necessary therefore to reform it. Without this reform, Turkey can refuse to follow out a sanitary system, which, instead of being shared by all the nations interested, has for a long time been supported by her alone. If this should happen, the public health, it may be easily understood, would be compromised, it would, in fact, be (to make a comparison) like pretending to have a good army without regular maintenance and sufficient pay.

M. Fauvel estimated that, if looked at as a question of tariff, several considerations must be taken advantage of, calculated to simplify the discussion. In the first place, he said, what is the pith of the matter? The French Delegates do not require the determination, the solution of the question of sanitary dues, but simply that it should be taken into consideration, and an opinion pronounced in conformity with equity and the rights of the Ottoman Government. Every body admits that the present tariff, being insufficient, may become prejudicial to the public health. All the nations having representatives at the superior Council of Health authorised their Delegates to consider this important question. In fact, it was properly studied and a report followed. This report was communicated to every Government, but it had no result, simply because the Turkish Government, on the one hand—interested as it was more than any other power, and bearing the whole charge almost singly—did not follow up the reform with sufficient energy; and because, on the other hand, the Powers which would have proportionately to make up the annual deficit, found it more convenient to leave Turkey to bear the increased expenditure. It must be said, however, M. Fauvel added, that the French Government has found that the question of the tariff deserves to be taken into serious consideration—that on this question depends the existence and the future of the sanitary department, confided, it is true, to Turkey, which is, so to say, the guardian of the public health, but which interests all nations in the highest degree. For this reason, said M. Fauvel, the French Government has authorised its Delegates in the International Sanitary Conference, where all maritime nations are represented, and whose mission it is to occupy itself with all sanitary questions, to bring this question before it with the object of obtaining its opinion. This, said M. Fauvel, is an admission that the Conference is of somewhat great importance, and at the same time a declaration that it is competent to occupy itself with such a question. The Conference, I am sure, said M. Fauvel, does not compromise itself by taking the matter up, for it simply gives an opinion on the manner in which equitably to cover the expenditure caused by the sanitary administration, an administration on which the public health is dependent.

M. Monlau begged that M. Fauvel would be good enough to tell him whether Turkey had concurred in the decisions of the Conference of 1851.

M. Fauvel replied that Turkey had concurred in them, but that she had not ratified them.

M. Stenersen, replying to MM. de Lallemand and Fauvel, said he had never dreamt of disputing the justice of the principle on which their proposition was based, and that nobody could more highly applaud the praiseworthy efforts of the Sublime Porte for the maintenance of the good organisation of the sanitary administration in Turkey than himself. He only disputed, and he still disputed, the competence of the Conference to occupy itself, without authority previously given, with the regulation of quarantine duties in Ottoman ports. It is true, added M. Stenersen, that there is a difference in the position occupied by the Ottoman Government and that taken by other Powers with regard to foreign powers. But this difference consists simply in this, that every measure affecting foreigners, which, in other countries, is decreed by the act of the local Government alone, is in Turkey carried out in conjunction with the foreign representatives. It is evident, continued M. Stenersen, that this difference can in no way influence the position of the Conference, whose authority, regarded in connexion with the Sublime Porte and foreign representatives, remains absolutely the same as every where else in connexion with local administration. To add to the authority of the Conference in the manner desired by the French Delegates, it is absolutely necessary, in my opinion, said M. Stenersen, that the different Governments should confer upon their Delegates in this assembly, by virtue of fresh instructions, a portion of the powers appertaining to their representatives at Constantinople. M. Fauvel, continued M. Stenersen, had said that there was no question of adopting a resolution, but simply of giving an opinion; but he (M. Stenersen) denied that the Conference had the right of even offering an opinion on, or of occupying itself in even the minutest manner with, one single question which was not comprised within the limits traced out for its labors. And though it had been pretended that the question of sanitary dues was so intimately connected with the question of sanitary administration, that the one could not be solved without the other, it was evident that there existed also a great number of other questions more or less directly affecting the sanitary administration and the public health, which questions nevertheless were not within the province of the Conference. As for the tariff, M. Stenersen denied that it was the result of regular negotiations between the Sublime Porte and the other Governments; the tariff was elaborated by the Council of Health, an assembly containing the Delegates of most maritime Powers, but not *of all*, and which, so far as those countries were concerned which were not represented in it, could be regarded only as a gathering of individuals possessed of no official authority. Sweden and Norway were among the unrepresented States, and if, notwithstanding that, Swedish and Norwegian captains had hitherto paid the dues imposed by the Council, it was not by any means that they had admitted the authority of the Council, or accepted the principle of having dues imposed on them in Turkey by foreigners, but simply because they had wished to avoid a scandal, a scandal, however, which would be sure to occur hereafter.

M. Mühlig thought, contrary to the opinion of several of his colleagues, that the Conference was competent, and that it had the right to take up the French proposition, even without having received special

authority to do so. The chief measures for the prevention of further invasions of cholera ought to emanate from the Conference, and the duty of putting them into execution and seeing them properly carried out would probably devolve upon Turkey. It was quite evident that the expenditure would have to be met by her—and it was a matter of necessity that the Conference should study the means of providing for the expenses and their equitable distribution. And it would do this by occupying itself with the proposition of the French Delegates.

M. de Krause said he saw no inconvenience in receiving the communication of the Count de Lallemand. And meanwhile every Delegate must, if he thought it necessary, ask his Government to authorise him to enter upon such a question.

M. de Lallemand admitted that the French Delegates wished for nothing more than that.

M. de Segovia was of opinion that it was the province of the Conference to see if the sanitary administration generally, and in particular places, was well organised, and therefore in that, as well as with regard to all questions of *principle*, the Conference, he thought, had all the right, and therefore the competence to offer a suggestion. But this was not the question raised by the communication of Count de Lallemand. His referred to sanitary dues in detail down to 14 centimes and other things, in a word, to internal administration, which was completely beyond the limits traced for the Conference by the Governments represented. He failed to perceive the reasonableness of such a communication. To take it into consideration, special authority was needed from their Governments. He could have wished that the Ottoman Government itself had made the communication in question, for then, perhaps, furnished with the necessary instructions, they would have been able to take it into consideration. But at that moment, in its present form, it had too much of the appearance of a question of internal administration, which was not within the competence of the Conference, and consequently they would have to refer to their respective Governments before taking it up.

M. de Soveral thought the question essentially within the competence of the Conference, and all the more so that the French Government which had taken the initiative in convoking the Conference, wished to invest it with the power of occupying itself with the matter. What evil could result from it? He proposed to postpone it for the time, not taking it into consideration until the Conference entered upon the discussion of sanitary measures. That would perhaps be the most favorable time for the consideration of the question of the dues to be imposed by the sanitary administration.

M. Van Geuns held that the Conference had a tendency to travel beyond the limits laid down for its labors. The French proposition seemed in the first place to be put forward at a most unseasonable time. Hitherto the Conference not having occupied itself with sanitary measures, the question of sanitary dues could not be entered upon.

This question could not be taken into consideration, in his opinion, until after the subjects in the 2nd chapter of the 3rd group had been discussed. However, it was still necessary that the Conference should declare the scope it intended to give to its labors before entering upon the question.

As for the competence of the Conference to discuss such a subject, it appeared to him (M. Van Geuns) that the Conference ought rather to occupy itself with questions in a *general* point of view and leave to diplomacy the task of drawing up international treaties. Independently of the fact that the Conference would perhaps be taking up points not within its province by discussing questions of this nature, it would require a very long time to come to an understanding on a matter which had already during several years occupied the Council of Health and the different Governments to which up to the present time two tariffs had been submitted, neither of which apparently satisfied the interested parties.

M. Van Geuns summed up as follows:—

1*st.*—Ask for special authority to consider the French proposition.

2*nd.*—Print and distribute to all the Delegates the communication of the Count de Lallemand, so that they may be able to study it.

3*rd.*—Postpone this question until the discussion of matters concerning sanitary measures.

M. Fauvel addressed some observations to MM. Segovia and Van Geuns:—To M. Segovia that there were no means of discussing questions in a purely *abstract*, general, and (so to speak) *platonic* manner, and moreover that it was not desirable to do so. He desired him to remark that it was necessary to descend to the question of figures when the Ottoman Government was concerned, for that Government was by treaty powerless to impose a tariff, even though it possessed all the right to do so, since it paid for all the other Governments the expenses of the sanitary administration. There were Governments which knew well how to enunciate general principles like M. Segovia, but they buried themselves in silence and inactivity when the question arose of paying their shares of the expenditure supported by the Ottoman Government on account of all the powers interested. In principle the rights of the Sublime Porte were recognised and the equity of the reform of the tariff admitted, and yet they refused to have anything to do with the question of figures.

As for M. Van Geuns, continued M. Fauvel, he ought to know that his Government, is, thanks to M. Millingen, who represents it in the Council of Health, perfectly *au courant* of the question—and therefore will easily grant its Delegates the powers necessary for entering upon its discussion.

To conclude, said M. Fauvel, the Conference must receive the proposition of the French Delegates, and each deligate must ask its Government for such instructions as he may think necessary for its discussion at a fitting opportunity.

The honorable gentleman who spoke last, said M. Segovia, maintained that several Governments, while admitting the justice of the principle of a reform in the tariff, refused to subject themselves to the charges to be incurred thereby. He (M. Segovia) would oppose such an assertion—no Government, —and Spain less than any other, though unhappily her commerce in the East had lost its ancient splendour—no Government, he was assured, had ever refused to meet its share of the common expense. He added that he wished M. Fauvel would not insist upon maintaining this assertion. M. Fauvel should be persuaded that the proposition of Count de Lallemand was altogether of an administrative character. The Conference could not, and ought not, to occupy itself with any but questions of principle.

M. Fauvel, in reply, said that it would seem that M. Segovia had no very precise ideas in regard to the duties and treaties by which navigation in the East was regulated. Otherwise he (M. Fauvel) entertained no doubt that M. Segovia would be the first to proclaim the necessity of reforming a tariff which was burthensome to Turkey, which threatened the sanitary administration with ruin, and which was out of date. In 1856 a new duty was imposed by the Ottoman Government—well, what followed?—nobody would recognise or accept it. If it were considered desirable to maintain the sanitary administration, it was necessary that the expenses which it entailed should be covered by sufficient duties.

M. Segovia assured M. Fauvel that he was as well acquainted as anybody with the treaties by which navigation in the East was regulated, but he did not wish to lend himself to the transformation of the Conference and its conversion into an administrative Council of Health.

M. Sawas, speaking in his capacity as a Delegate to the Superior Council of Health, believed he was bound to declare that he was one of those who had supported the principle of the reform of the tariff; for the Ottoman sanitary administration, he observed, really stood in need of an increase in the tariff, and it had the right to demand it. But now, said M. Sawas, owing to the communication of Count de Lallemand, a question of competence was raised—a question in favor of which he (M. Sawas) could find nothing to say, notwithstanding all that had been urged for it, and he thought he would not be able to say anything upon the matter without asking for and receiving special instructions—he had no doubt that if the Conference declared itself to be competent, his Government, from which he would ask orders in consequence, would bid him support in all points his honorable colleagues, the Delegates of the Sublime Porte. Meanwhile, he said, he could only abstain from taking part in the discussion, and still more in voting, if the Conference were to enter upon the one and proceed to the other.

M. de Lallemand, believing he had said enough to make the Conference thoroughly acquainted with the subject, brought forward the following proposition:—

"That the Conference receive the communication of the Delegates of the French Government, and postpone the examination of the

question of the tariff of Ottoman sanitary duties, until all the Delegates shall have been put in possession of authority to enter upon the matter."

Mr. Stuart opposed the proposition, and made the following counter-proposal:—

"That the Conference, not being able, from want of competence, to take the proposition of the Delegates of the French Government into consideration, proceed to the order of the day."

M. Fauvel considered it was *bad usage* on the part of Mr. Stuart to bring forward that proposition. The French proposition, he said, was treated as if it contained something immoral, as if it did not emanate from the French Government.

M. de Lallemand expressed himself in a like sense.

Mr. Stuart assured the French Delegates that he had no intention of wounding their feelings, that there was not even the shadow of an evil intention on his part. If he proposed that they should proceed to the order of the day, it was simply because he considered that the Conference was not competent to occupy itself with their proposition.

M. Bartoletti wished it to be recorded in the minutes that, according to the Ottoman Delegates, the question of the tariff was intimately connected with the sanitary question and with all the questions with which the Conference was busied. The French proposition, he said, was in the highest degree important to the protection of the public health. It should be impressed upon the members, once again, that, if the question of the tariff was not equitably solved, the sanitary administration could not exist; for the Ottoman Government would probably be compelled to decline any longer to meet unassisted all the expenditure of that department.

MM. de Soveral and Sallem Bey supported M. Bartoletti.

M. Pinto de Soveral added—"Let it be recorded on the minutes that my opinion is totally opposed to that of M. Segovia—that I consider the conference quite competent, either as an entire body, or, if desirable, only the diplomatic portion of it, to occupy itself with administrative questions."

M. Stenersen remarked to the honorable conference that the French Delegates had consented to postpone the discussion of their proposition to another sitting. The form in which the proposition of Count de Lallemand had been last put was in accordance with his (M. Stenersen's) proposal to adjourn the discussion. As perfect accord, said M. Stenersen in conclusion, had been established on every side, they might proceed to the vote without prolonging the discussion any further.

Having taken the opinion of the Conference, H. E. the President put the several propositions to the vote.

M. de Lallemand desired that Mr. Stuart's proposition should be the first put to the vote. Only he asked, in order that his Government might know who voted against his proposition, that they should proceed, to the vote by calling out the names.

H. E. the President put the Hon. Mr. Stuart's proposition to the vote. It was rejected.

Votes for Mr. Stuart's proposition; MM. Keun, Stuart, and Goodeve (3).

Votes against the same: MM. Segovia, Monlau, Spadaro, Lallemand, Fauvel, Kalergi, Bosi, Vernoni, Van Geuns, Gomez, Soveral, de Krause, Mühlig, Lenz, Hübsch, Stenersen, Bartoletti, H. E. Salih Effendi (18).

Abstained from voting: M. Vetsera, M. de Noidans, M. Sotto, M. Sawas, Malkom Khan, M. Pelikan (6).

MM. de Soveral and Kalergi said they withdrew their propositions.

On the request of M. Stenersen, who remarked that there were two very distinct French propositions, H. E. the President put to the vote the second proposition of the Delegates of the French Government which was at the same time that of M. Stenersen himself; and which was thus conceived:

"That the Conference receive the communication of the Delegates of the French Government, and postpone the examination of the question of the tariff of the Ottoman sanitory duties until the Delegates shall have been put in possession of authority to enter upon it."

Votes in favor of the proposition, 20 Delegates:

MM. Noidans, Segovia, Monlau, Spadaro, Lallemand, Fauvel, Kalergi, Vernoni, Bosi, Van Geuns, Malkom Khan, Pinto de Soveral, Gomez, deKrause, Mühlig, Lenz, Stenersen, Hübsch, Bartoletti, H. E. Salih Effendi.

Votes against the proposition, 4 Delegates:

MM. Vetsera, Sotto, Stuart, Goodeve.

Three abstentions:

MM. Keun, Sawas, Pelikan.

Count de Lallemand asked the honorable Conference if it intended to have his communication printed.

The Conference having replied in the affirmative, M. de Lallemand handed it over to the Secretaries to be dealt with accordingly.

H. E. the President invited the Conference to proceed, after some minutes of refreshment, to the questions entered on the order of the day.

The first thing to be done being the continuation of the discussion on the report on the 3rd group of the programme, H. E. invited M. Monlau to speak, he having taken the place of the reporter, M. Pelikan.

M. Monlau began to read, paragraph by paragraph, the part of the report which has not yet been discussed, commencing with the title of the first section: "Preservation by local hygienic measures."

MM. Bartoletti and Salem Bey remarked to M. Monlau that it would be necessary to commence with the discussion of the title of the first section.

M. de Lallemand and several other Delegates reminded M. Monlau that at its previous meeting the Conference had decided on suppressing the word *local*.

M. Monlau agreed.

M. Mühlig asked permission to speak in order to make some observations touching the general distribution of the report into three sections or groups.

In the last sitting, he said it was decided to maintain the division in three sections, according to the report of the Committee. Afterwards he (M. Monlau) found that there were questions which were not included in any of the groups—yet they were very important questions which it was very necessary should be comprised in the report. He proposed accordingly to add a fourth section, in which the questions of which he meant to speak should have a place.

The third group of the report of the Committee, continued M. Mühlig is entitled "Preservation by special sanitory measures for the East." What does that mean? It means that there ought to be a system of measures for the West, very different from the necessary measures drawn up for the East.

Now, such a collection of measures, he continued, not existing in the report, it would be useful to complement it by the addition of a fourth section, exclusively devoted to special measures for the West, *i. e.*, for Europe. This group of measures might be studied by the same Committee, which would have to examine the 3rd group.

M. Monlau formally opposed any such addition. The questions indicated by M. Mühlig were to be found in the 4th paragraph of the 1st section as well as in several other places in the report. According to M. Mühlig's idea, it would be necessary to group them in a section by themselves, but the Committee did not see the necessity of doing so.

M. Mühlig insisted on the necessity of adopting for Europe measures quite different from those advised by the Committee for the East.

M. Polak opposed the proposition of M. Mühlig. The measures to be adopted for Europe could not be indicated in an altogether special manner—they could not be peculiar to Europe alone, and they were to be found among those included in the report.

M. de Krause urged the following considerations in support of M. Mühlig's proposition:

"If I have properly understood M. Mühlig, he believes that by the examination of prophylactic measures we shall be led to adopt different measures for the various countries whose preservation is in question.

The Committee itself has felt the justice of this provision: if it did not, it would not have spoken of special measures for the East. The proposal to add a 4th group embracing the measures to be taken in Europe is therefore only the complement of the idea of the Committee, which, I think, will not oppose the proposition."

M. Lenz also believed that the questions which M. Mühlig desired to add were to be found in several parts of the report.

M. Fauvel was of opinion that it should be necessary to wait till they had come to the discussion of the 3rd group, in order to give M. Mühlig's proposition a suitable place. It could not be seen till then whether it was necessary and indispensable. At that moment, he (M. Fauvel) found it out of place, and he proposed to pass it over.

M. Mühlig adheared to his idea, but he added that the question of disinfection, which it was of the greatest importance to study, ought to be placed at the head of the 3rd section.

M. Segovia observed to M. Mühlig that the Committee by which the report had been drawn up had only followed his own example. In fact, M. Mühlig himself, in the programme of the labors of the Conference, had placed the question of disinfection in the 1st paragraph of the first head. He had changed his opinion to-day, but how could that have been foreseen ?

M. Polak also observed to M. Mühlig that they could not commence a treatise on hygiene having disinfectants for the subject of its first chapter. He demonstrated that the question of disinfectants had its proper place where the Committee had put it.

M. Pelikan agreed in this opinion. With regard to the 1st paragraph, he wished to see the words "*in India*" struck out.

M. Pelikan's proposal was not accepted.

M. Fauvel thought, for his part, and in conformity with the view of the matter taken by M. Mühlig, that the question of *disinfection*, which was more important than any other, and which was to play an important part in measures of hygiene, was not properly indicated, and was not in its proper place. In fact, said M. Fauvel, hygienic measures, properly so called, were comprised in the 2nd and 3rd paragraphs of the 1st section, the other paragraphs comprising only measures of quarantine. Now, in the report the phrase "means of disinfection" was used, but what were these means ? It was not stated, and yet they were of several kinds. This question was so important that, if efficacious disinfectants were found, of sure and general virtue, the question of quarantines would become a matter of altogether secondary consideration. But it was not so, for unhappily science was not acquainted with any very sure disinfectants. As it would be of immense advantage to classify the questions properly and distinctly, M. Fauvel believed that the work of the Committee would gain in interest if the 1st paragraph were transposed to the 3rd and the 4th, and a part of the 3rd to the 2nd.

MM. Monlau and Pelikan brought forward several arguments to show that the 1st paragraph was where it ought to be.

M. Mühlig held that the system of the Committee was faulty at bottom, and that that was the reason why they could not come to an understanding. He thought that, for the solution of the question whether there were means of extinguishing cholera in India, it was necessary for the Conference in the first instance to see what were the efficacious means now used against cholera.

M. Mühlig said also that to the second paragraph, the word *slaughter-houses* should be added.

M. Van Geuns was of opinion that M. Mühlig thought more than was necessary about the question of disinfection. The great question in his (M. Van Geuns') opinion was the sanitation of countries not only by disinfection but by all the hygienic means in our possession. Disinfection, he added, implied the existence of infection—but Governments and men of science should have but one great and single anxiety, *viz.*, to prevent the production of infection, to extinguish its sources for ever —to prevent infection by radical measures.

The third group had quite a different tendency, for it treated of the means of stopping the progress of cholera.

M. Bykow made the following remarks:—

He was quite of accord with MM. Fauvel and Mühlig, and he was of opinion that the first question, which related to hygienic measures applicable to India, should be transposed to the 3rd section, for otherwise that section would have no object if the subjects properly belonging to it were scattered through several sections.

M. Bykow also proposed to transpose the 1st paragraph of the 1st section to the 3rd section, for which it was best adapted. As for the question of the temporary interruption of communications, it was certain that interruption was everywhere considered as a measure of quarantine, even according to the definition of M. Monlau, who showed, in the first meeting, that the difference between measures of hygiene and measures of quarantine was that a man subjected to a hygienic measure was at liberty to go where he liked, while by a measure of quarantine, his habitation was fixed, and he was deprived of the liberty of going from one place to another. Well, when communications were interrupted, and persons subjected to the measure were deprived of the right to pass beyond the prescribed limits, they became subject to *quarantine*. He (M. Bykow) was of opinion accordingly that this question should be transposed to the second section.

As for disinfection, M. Bykow believed that, without treating this question separately as M. Mühlig desired, it would be useful to place it in the third paragraph among the measures of sanitary police.

Several delegates asked that the propositions of M. Mühlig and the report of the Committee as it stood when originally drawn up, should be put to the vote.

The place given to each paragraph by the Committee was retained by a majority of 16 votes against 10.

In regard to the 2nd paragraph, M. Mühlig repeated that he wished to see *slaughter-houses* added to it.

M. Monlau replied that when the question of the sanitation of towns in general was brought up, the question of slaughter-houses would be comprised in it as well as many other things which the Committee had been careful not to specify, so that he thought this subtile addition would be superfluous.

M. Mühlig said that naval hygiene, which was mentioned at the end of the 2nd paragraph, was indicated in a very vague and general manner. He thought that *naval hygiene* should comprise all the measures to be taken with regard to ships exposed to choleraic contamination, either to prevent the formation of foci on board, or to extinguish existing foci.

M. Bykow was of opinion that that question would find a better place among the questions of the 3rd section. In any case it ought not to be included among the measures regarding the sanitation of towns. The measures which could be applied to ships on their start, during the voyage, and on their arrival, ought, he thought, to find their place in the quarantine regulations of each country. M. Bykow concluded therefore that it would be more logical to place the question of naval hygiene in the 16th paragraph of the 2nd section, where the disinfection of ships was treated of.

Dr. Dickson was of opinion that it would be necessary to divide questions of hygiene into three classes—naval hygiene—urban hygiene—and military hygiene, in which last should be included such assemblages as fairs, pilgrimages, &c. Each of these classes would comprise the various questions relating to it, and they would be better and more practically studied.

M. Gomez pointed out that the Committee did not intend to draw up a treatise on hygiene. The Committee had only desired to touch upon almost all those questions of hygiene which were more or less connected with cholera. The question of sewers, however, ought to be an exception, for it was almost demonstrated at the present day that the principal source of the propagation of the disease consisted in the *excreta* of cholera patients. As much could not be said for slaughter-houses, which only slightly influenced the progress or the violence of cholera. The same considerations, he said in conclusion, are attached to the greater or less importance of naval hygiene, the hygiene of towns, &c., in regard to cholera. Well regulated hygiene has as much influence on any other epidemic as it has on cholera.

M. Sawas declared that he was quite of the same opinion as the honorable gentleman who spoke last; only he deemed it necessary to make an exception in the East in favor of slaughter-houses, the primitive condition in which they were, gave them considerable importance. Consequently M. Sawas proposed the addition of the words *slaughter-houses* before the word latrines, and that they should then proceed to the vote upon the article.

M. Fauvel thought such an addition of no use. It referred to details which were studied and appreciated at their legitimate value in the general report; and for the time being, he thought that the Conference, having decided not to bind itself down to strict and methodical order in its labors, it was not necessary to attach any weight to such details.

M. Mühlig said that in that case it would be better to accept the report as a whole, and to leave it to the Committees to whom would be assigned the duty of studying the different groups of the questions, to put them in order, arranging the numerous subjects belonging to them according to their character and their reciprocal relations.

Several Delegates supported M. Mühlig's proposition, but MM. Fauvel and Sawas opposed it, urging the reasons appreciated by the Conference when it decided on discussing the report section by section and each paragraph separately.

The Conference asked H. E. the President to put the two paragraphs of the first section of the report to the vote.

H. E. the President put to the vote the first section, including the two first paragraphs, as they stood in the report.

The first section, including the two paragraphs, was adopted as it stood by a majority of 18 votes against 3.

Several Delegates proposed the next Saturday, the 2nd June, and others Monday, the 4th June, as the next day of meeting.

A vote being taken by H. E. the President, there were 14 votes for Monday, and 15 for Saturday.

The next meeting was fixed for Saturday, the 2nd June.

Order of the day for the next meeting.

1.—Continuation of the discussion of the report on the 3rd group of the programme.

2.—Reading and discussion of the general report.

The meeting terminated at 4-45 P. M.

SALIH,

President of the Sanitary Conference.

DR. NARANZI,
BARON DE COLLONGUE, } *Secretaries.*

REPORT OF THE COMMITTEE APPOINTED BY THE COUNCIL OF HEALTH TO DRAW UP A DRAFT TARIFF OF SANITARY DUES IN THE OTTOMAN EMPIRE.

MEMBERS OF THE COMMITTEE.

MM. Fevzi Effendi.	MM. Fauvel.
Dickson.	LeBidart.
Eudasian.	Marchand.

Bartoletti, *Reporter.*

Gentlemen,—Since your recognition of the necessity for a revision of the tariff of sanitary dues, this question has assumed, by the force of circumstances, a character of urgency which becomes more and more pressing, and you have appointed a Committee to elaborate a project of reform, making the receipts of dues harmonise with the necessities of the service. This draft we have now the honor to present to you, and it appears to us to comply with the necessities of the situation.

The Council of Health has before this, since 1856, occupied itself with the increase of sanitary taxation; but, whether owing to inherent defects in the proposals then made, or to reasons independent of them, that project had no result, although sanctioned by Imperial edict. Meanwhile, the evil has grown, business suffers from want of funds, and the department is menaced with extinction, slow but inevitable.

Taught by the failure of this first attempt at reform, your Committee has particularly sought to avoid the rocks on which it split. It has gathered round it all the elements of information adapted to throw light upon the subject; it has collected figures, as precise as possible, with regard to the course of navigation in Turkey, the receipts from quarantines, and the annual cost of the department; and, with the aid of this statistical information, it has drawn up a plan, not of course absolutely correct, but very closely approximating to the truth.

The object proposed to be attained by the Committee was to meet the expenses of the service from its own resources; at the same time pressing as lightly as possible on the tax-payers. This principle, established by the Pairs International Sanitary Conference, was also adopted as the basis of the Turkish tariff in force since 1838; but, founded on the eventuality of quarantines, which, frequent as they were during the prevalence of the plague, have become a rare exception since the improvement of the public health everywhere, this tariff is not now sufficiently productive, and its receipts are much below the necessities it is called upon to support. In fact, the revenues from quarantines, diminishing progressively, and, so to say, in inverse ratio to the successes obtained, the result has been a constantly increasing

deficit, which the Government has to meet by an annual subvention of several millions. But in the meantime, as the financial condition of the country imperiously demands economy in every branch of the public administration, the department of quarantines has been included. On two successive occasions, in 1854 and 1859, its expenses have been reduced to two millions from six. The staff has been rendered ineffective by ill-timed suppressions, and the payments have been restricted to an insufficient minimum. Such greatly to be regretted, but now necessary measures have profoundly affected the organization of the department: for qualified persons refuse to serve under such disadvantageous conditions, and the administration has been compelled to confide its very delicate interests to mediocre and sometimes incapable people. We could unhappily quote instances of this inferiority of the actual staff of the department as compared with the past. Now, gentlemen, the re-establishment of the balance between the receipts and the expenditure is the maintenance in good working order of an institution necessary to the security of international communications, and the interests of every marine navigating the seas of the Levant. Let us, in fact, suppose for a moment what would be the result, we will not say of the outbreak of an epidemic on the Turkish coasts, but even of the rumour of a suspicious disease,—unless there is a body of instructed physicans and vigilant agents on the spot, to show its groundlessness,—in the shape of interruptions to commerce, and disturbance in all the relations between the West and the East! It is evident that the distrust which would follow, exaggerated by legitimate apprehensions, would affect interests so great as to render it imprudent to risk such a lamentable contingency.

To arrive, moreover, at the proposed equilibrium, the Committee as we have said above, had to change no principle, but simply to find the means of raising the sum of the receipts. Two modes of doing so then presented themselves to its choice: one was to increase the dues of the sanitary formalities, on the base of the actual tariff; the other, to levy one single and uniform tax, proportionate to the tonnage of ships. The Committee, after mature and deliberate examination, did not hesitate to adopt this latter system, which is at the same time more practical and more equitable than the former: for it is applicable, without distinction of categories, to all ships, according to the capacity and operations of each. It is, moreover, almost the same system which is adopted by the Mediterranean States which have reformed their regulations according to the principles of the International Sanitary Conference of 1852.

It would be a powerful argument to urge here to remind you of the services rendered by the department of quarantines since its establishment in Turkey, to the public health in general, as well as to the commercial relations of every country,—incalculable services, which compensate largely for the sacrifices demanded of navigation for its maintenance. But this side of the question, important as it is in the point of view of increase of sanitary taxation, would make

this report travel wide of its chief subject. The Committee, therefore, has confined itself to stating the fact, passing on to the examination of the plan of tariff it proposes.

The annual expenditure of the administration amounts, in round numbers, to the sum of 4,250,000 piastres, 3,900,000 of which are devoted to the salaries of the members of the department, and 350,000 to office expenses, and expenses of maintenance. The actual receipts are, on an average, 1,000,000 piastres per annum, (see the table appended to the report). We have, then, to make up a deficit of 3,500,000 piastres, in order to balance the expenditure with the receipts. The general tonnage of the navigation in Turkey being valued at an average, and deducting second or double *calls* at ports, at 6,000,000 tons a year, the Committee proposes a tax of 26 paras per ton, producing a sum of 3,900,000 piastres. By imposing, in addition 4 paras per ton on mail-steamers, not comprised in the general valuation of the 6,000,000 tons, we would arrive, approximately, at an annual product of 350,000 piastres, forming a total altogether of 4,250,000 paistres, or a sum equal to the expenditure of the administration.

This system being admitted, we now proceed to detail its combinations, tending at the same to give precision to its application, and to render the tax as little burthensome as possible.

Every ship, wherever it may have come from, and whatever may be its capacity, will pay a survey duty of 26 paras per ton at the port of first arrival, and once only during the course of the voyage. Ships of 801 tons and upwards, will pay duty on 800 only. Mail-steamers, making voyages on fixed and appointed days, will pay, on every occasion of touching at a port, a survey duty of 4 paras per ton.

As for contingent quarantine dues, the Committee proposes to do away with them, maintaining some only on account of reimbursement of expenditure occasioned by keeping up lezarettos, and purifying ships and goods, these expences not being comprised in the calculation of the general cost of the service, such as the payment of guards of health at the rate of 20 piastres per diem; a duty on every person staying at a lazaretto, at the rate of 5 piastres per diam for each; and a duty on goods subjected to purification: For goods in bales, 2½ piastres per 100 okes; for hides, 3 piastres per 100 pieces, and for small skins, not wrapped in bales, 2½ piastres per 100.

Thus the tax on ships in quarantine, as well as search, bill of health, and visa dues, which under the former tariff constituted the chief sources of revenue, are suppressed. In addition, ships of war, fishing-smacks, and ships compelled by stress of weather or other reasons, to put into port, are, as formerly, exempted from the tax, provided they are not admitted to pratique, and that they do not engage in commercial operations in the ports they enter.

Such, on the whole, is the plan adopted by the Committee in preference to any combination of a tariff graduated according to classes of ships. In this manner we have avoided the proposed levy of a survey duty of 30 paras per ton on ships arriving from a foreign port in an Ottoman port; of 20 paras on ships proceeding from one Ottoman port to another; of 10 paras on ships coming under this latter head, registering 50 tons and upwards; and 10 paras per ton on mail steamers. And we have done the same with another form of the same system, proposing a duty of 30 paras per ton on sailing-vessels; 20 paras on steamers other than mail-packets, and ships of 25 tons and upwards; and 5 paras on mail-steamers. This system, apparently equitable by reason of the difference generally admitted in all tariffs, is not so in reality, and still less so when one considers the circumstances peculiar to Turkey. These are as follows:—The Turkish mercantile marine consists chiefly of small coasting vessels. It is numerous, but of such tonnage that it will feel the tax of 26 paras as lightly as it did the old duty. We do not speak here of vessels of large dimensions, which are comprised in the general category. On the other hand, if the tax on small vessels were reduced, and that on those of larger size raised in proportion, the burthen would fall more heavily on foreign marines than on that of Turkey. Now Turkey, we admit, ought also to contribute, in proportion to the extent of its own marine, to the expences of her quarantines. It is right, therefore, that coasting-vessels should furnish a contingent proportionate to its tonnage and its operations. These are the motives by which the Committee has been guided in the choice it has made, from among the various combinations brought before it, of a simple tax of 26 paras, applicable to all vessels wherever they may have come from, and whatever may be their size; with the exceptions, however, we shall presently mention.

We will be told that the Committee has in effect proposed in principle a simple tax without distinction of classes; why then, we will be asked, fix a maximum of tonnage at which the tax stops, and why have the tax of 26 paras on the one side, and that of 4 paras on the other? And would it not be more reasonable to do away with these differences?

Doubtless, if the Committee had only to take into account the difficulties likely to arise, and which at a former period caused the plan of tariff to fail, it might have risked overlooking exigencies which nevertheless we believe to be sufficiently well-founded to deserve that satisfaction should be given them. Starting with this consideration, and after calculating that the duty of 26 paras on six million of tons would amount to 3,900,000 piastres, the Committee believed it might adopt 800 tons as the limit of capacity for the imposition of the tax. After all, this is only a small sacrifice, which benefits a notoriously restricted number of vessels, and which, while it facilitates the acceptation of the tariff, in no way disturbs the system of equality of the tax.

As for the duty of 26 paras, equivalent to 14 centimes, it is the minimum that the Committee has been able to propose in order to obtain

a result of 3,900,000 piastres. This duty, inferior to the tariff of most Mediterranean States, the maximum of the French tariff being 15 centimes, and that of Italian Ports 80 centimes, has been so calculated by the Committee that, combined with the tax of 4 paras imposed on mail-steamers, it produces the amount corresponding with the expenditure of the department.

The figure of 4 paras demanded from mail-packets is, moreover, far from being an arbitrary one: it is based on substantial grounds. Mail-packets touch at almost all the ports on the vast sea-board of the Ottoman Empire; they make obligatory voyages on fixed dates and at fixed hours; they consequently perform a heavy task, which is not imposed upon free navigation, whether sailing-vessels or steamers. But the reason which fully justifies the difference, in the matter of taxation, between the two classes of vessels in question, is that the mail-packets will pay the duty of 4 paras at every port of call, while other vessels will have to pay the tax of 26 paras only once during the course of a voyage; and this difference will be still better understood by the definition we proceed to give of the clause ruling that the survey duty shall be paid only once during the course of the one voyage.

The object of this clause is to relieve ships which may touch at several ports from paying the duty afresh, after having paid it at the first port of call. In this manner, to site a practical instance, a ship starting from Marseilles or Trieste, and going to Salonica, would pay the tax at this latter port on first arrival. If this same ship, after having landed a portion of her cargo at Salonica, were to touch successively at Constantinople and Varna, landing the rest of her cargo without shipping anything, she would be understood to have made but one and the same transaction, and, in this case, she is exempt from any further taxation. But if, on the contrary, she ships either cargo or passengers, either at Salonica or Constantinople, bound to Varna, she commences a fresh commercial transaction, which is subject to the tax. In other words, the singleness of the transaction consists in the landing, either at one port, or at several in succession, of the merchandise shipped at the first port of departure, and a fresh transaction is not supposed to have been entered upon unless the portion landed at an intermediate port is replaced by a fresh merchandise. It is under this latter condition that a ship is subject to the payment over again of the tax at the subsequent port of arrival. Consequently, the clause regarding the singleness of the operation, which is favorable to navigation in general, is not so with regard to mail-steamers, which ship passengers or goods at every port of call, and this is what completely justifies the difference between the tax of 26 and that of 4 paras.

The document which shows the sanitary condition of the place of departure is the bill of health. Obligatory on all ships, with the exception of fishing-smacks and, in certain cases, of men-of-war, the bill of health will prove the payment in full of the dues, as well as the renewal of operations, if they should be renewed, by memoranda which the sanitary authorities of the ports of call will take care to

enter upon it. From the beginning to the end of a voyage, therefore a ship should have but the one bill of health, which is in no case to be changed for another until the return-voyage.

After having drawn up the plan of the tariff, the Committee has still another task to accomplish in entering upon the conditions necessary to its success. It invites your attention therefore, gentlemen, to the supplementary proposals about to follow.

The receipts may cover the anticipated amount of 4,250,000 piastres, and in that case the receipts and expenditure will balance each other; but also they may exceed this sum, or not come up to it. In the latter case, the Imperial Government will very naturally be looked to, to make up the deficit, and the Committee need say nothing more on this head. If, on the other hand, there is a surplus, after all the demands of the service have been provided for, it will be placed in reserve to meet any possible subsequent deficit, and so on for three successive years. At the end of that time, the Committee proposes to you to proceed to the revision of the tariff and its modification in accordance with the experience acquired during those three years. It is thoroughly understood, moreover, that the cost of new buildings, and the extraordinary expenditure necessitated by the outbreak of an epidemic in any part whatever of the Ottoman Empire, are to be met by the Government. Lastly, to ensure the final result of the new tariff, which consists in paying the department out of its own resources, it is important that the sum-total of the funds, kept specially apart from all others, should remain entirely at the disposal of the sanitary administration. With this object in view, the Committee proposes the management of the funds should devolve exclusively upon the Council of Health, which moreover, in its constitution, represents the interests of all the contributors. The Council should by its agents collect the sanitary dues, defray the cost of the department, and submit its accounts to the Government at stated periods. In other words, the Council should have the administration of the funds under the control of Government, and this department of the service would be worked in the same way as the nomination of employés, and the regulation of expenditure which devolve upon the Council, subject to the approval of Government. Thus the sanitary administration, separated as it is from every other department, and quite independent in its action under Government control, will be so too, with regard to the receipt of the dues, and the expenditure of the department.

Gentlemen, the Committee has been obliged, in the Report it presents to you, to study every interest, and to satisfy every exigency which has appeared to it to be legitimate. It has proposed a sanitary tax which harmonises with the tariffs of other countries,—a tax to which Ottoman coasting-vessels will have to contribute very largely. It proposes guarantees of a judicious administration of the funds, and a term of three years for the acquisition of experience in their management. If, in carrying out the directions given it, it has attained the

object required, and if the annexed draft tariff is adopted, it will remain for you to regulate some other administrative questions which will form the corollary and complement of the work of the Committee.

Tariff of Sanitary Dues in the Ottoman Empire.

ARTICLE I.

The tariff of sanitary dues comprises—

1*st*.—The survey duty payable by every vessel entering a Turkish port.

2*nd*.—The expenses of quarantine, if it is necessary to make a ship go into quarantine.

ARTICLE II.

Survey duty on arrival :—

(*A*).—Every ship, whatever may have been the port of departure, entering a Turkish port, shall pay (except as hereinafter provided) a survey duty of 26 paras. per ton, up to 800 tons only.

Ships registering 801 tons and upwards shall be subject to duty upon 800 tons only.

(*B*).—Mail-steamers shall pay the same duty at the rate of 4 paras per ton, a deduction being made of 40 per cent. for the engines and coal, and of 5 per cent. on the duty to be levied. This deduction is also applicable to all steamers.

ARTICLE III.

(*A*).—Ships which, during the course of a single operation, shall enter several Turkish ports in succession, shall pay the survey duty once only, viz., at the port of first arrival.

(*B*).—Mail-steamers shall pay the survey duty of 4 paras per ton at every port of call where they ship goods or passengers.

ARTICLE IV.

Quarantine duties—

	Paras.
(*A*).—Duty on account of guards of health, and porter-guards, per day and per guard	20
(*B*).—Duty on stay at the lazaretto, per diem and per individual	5
(*C*).—Duty on merchandise to be disinfected in the lazaretto :	
Baled goods, per 100 okes	2½
Hides, per cent.	5
Small skins, not baled, per 100 skins ...	2½

(*D*).—Cost of disinfection of ships according to amount expended.

ARTICLE V.

Children under the age of 7, and poor people, are exempt from payment of the duty on stay at the lazaretto.

ARTICLE VI.

1*st*.—Vessels of war; 2*nd*, vessels compelled by stress of weather or other reason to put into a port; provided they enter upon no commercial operations in the said port; 3*rd*, fishing-smacks; are exempted from payment of all the sanitary dues laid down in the preceding articles, except the salary of the guards.

ARTICLE VII.

The dues on bills of health and visas, as well as all the other duties formerly in force, and not mentioned in the present tariff, are abolished.

BARTOLETTI,

Reporter of the Committee.

CONSTANTINOPLE:
February 18*th*, 1865.

NOTE.—The present Report and the draft tariff accompanying it have been adopted by the majority of the members of the Committee. Messrs. Dickson and le Bidart, whose opinion in various points differed from that of the majority, reserved to themselves the right of bringing them forward ultimately.

STATISTICAL TABLE of the movements of Ships in the Turkish Ports, and of the receipts and expenditure of the Sanitary Administration, from the 1st March 1859 *to the 28th February* 1862.

SERVICES.	No. of Ships.			Tonnage.			Receipts from Duties.			Expenditure.		
	1859.	1860.	1861.	1859.	1860.	1861.	1859.	1860.	1861.	1859.	1860.	1861.
Constantinople (seaboard of Marmora, Rodosta, and Gallipoli) ...	30,815	29,599	28,080	3,046,302	3,125,351	3,183,220	315,059	305,663	321,575	1,092,925	1,085,637	1,034,068
Dardanelles and Dependencies...	10,750	8,945	10,516	1,176,587	1,162,155	1,296,881	134,615	143,332	135,818	337,254	339,015	335,563
Black Sea (Batoum, Trebizond, Samsoun, Sinope, Heraclea, Bourgas, and Varna)	18,872	18,928	20,165	671,850	638,044	538,350	165,001	101,335	95,479	314,712	307,392	306,329
Danube (Sulina, Toultcha, Silistria, Roustchouk, and Widin)	9,873	7,220	10,924	970,923	1,152,560	1,010,773	9,754	119,913	91,518	255,347	255,728	258,248
The Isles (Lemnos, Chio, Rhodes, Stancho, Crete, and Cyprus) ...	17,854	22,857	20,128	436,931	520,732	513,344	135,563	87,308	88,381	368,684	369,081	349,618
White Sea *European Coast* (Enos, Karagatch, Cavala, Salonica, and Volos)	13,204	12,079	12,581	339,110	313,754	330,050	60,345	60,283	64,461	168,127	169,770	173,015
Greek Frontier (Larissa and Dependencies)	.....	.....	.....	.....	.....	.....	.....	.....	.....	187,391	183,617	184,626
Adriatic Sea (Prevesa, Valona, Durazzo, Dulcigno, Alessio, Klek, and Soterina)	5,510	5,952	5,934	117,031	132,848	158,499	26,879	23,153	27,789	225,451	245,469	239,720
White Sea, *Asiatic Coast* (Aivalik, Smyrna, New Port, Boudroum, Alaya, Adalia, Mersina, and Alexandretta)	24,108	18,939	62,497	676,643	557,935	466,174	98,582	86,801	91,511	413,146	387,505	398,163
Syria (Beyrout and Dependencies, Damascus and Aleppo)	5,469	8,565	7,822	200,071	245,969	203,643	58,746	46,868	44,475	406,464	401,071	404,163
Africa (Tripoli and Benghasi)	428	589	705	19,055	36,462	33,869	3,438	6,394	6,343	400,071	569,675	566,362
Asiatic Frontiers (Erzeroum, Erdehan, Kars, Erzinghian, Bayazid, Kotour, Bagdad, and Teheran)	.....	.....	.....	.....	.....	.....	.....	.....	.....	821,655	725,406	721,640
Total	136,885	133,673	139,352	7,654,553	7,885,810	7,935,305	1,007,982	981,050	967,355	4,996,227	5,039,366	4,971,515
Average	.....	.....	136,636	.....	.....	7,758,555	.....	.....	985,462	.....	.....	5,002,370

From the average total amount of tonnage, *viz.*, 7,758,555, 1,758,555 tons have been deducted for double calls at the Dardanelles, Sulina, &c., leaving 6,000,000 tons, which, taxed at the rate of 26 paras per ton, give... ... ... Paras. 3,900,000

The tonnage of mail steamers not included in the Statistical Table, has been approximatively valued at 3,500,000 paying tons,* which, at the rate of 4 paras per ton, give a sum of 350,000

Total Receipts calculated according to the new tariff 4,250,000

Although the average expenditure shown in the Table amounts to 5,002,270 paras, we have adopted, as the basis of the tariff, the expenditure of 1863-64, which, on account of the diminution in the extraordinary expenses of the service during that year, principally in the Benghasi service, amounted to 4,248,287 paras only.

* The amount of the paying tonnage of the mail steamers is so high only on account of the great number of compulsory calls they have to make.

Dated Pera, 31st May 1866.

Proposition made by the Delegates of the French Government at the 10th Meeting.

[See pages 209 and 245.]

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 11, OF THE 2ND JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its eleventh Meeting on the 2nd June 1866, in the ordinary place of meeting, at Galata-Serai.

PRESENT :

For Austria.

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

For Belgium.

Count De Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain.

Don Antonio Maria Segovia, Consul-General, Chargé d'Affairs.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States.

Dr. Ignace Spadaro.

For France.

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain.

The Hon. M. W. Stuart, Secretary to Her Brittanic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece.

Dr. G. A. Maccas, 1st Physician to the King, Professor of Clinical Medicine in the University of Athens.

For Italy.

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands.

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia.

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to His Majesty's Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal.

Chevalier Edward Pinto de Soveral, Chargé d'Affairs.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia.

M. H. de Krause, Physician to the Legation; Chief Physician to the Ottoman Marine Hospital.

For Russia.

Dr. Pelikan, Councillor of State, Director of Russian Civil Medical Department.

Dr. Lenz, Councillor of College, attached to the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State; Co-Medical-Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway.

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway; Secretary to His Majesty's Legation.

Dr. Baron Hübsch.

For Turkey.

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople; Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department; Member of the Superior Council of Health at Constantinople.

For Egypt.

Dr. Salem Bey, Professor of Clinical and Pathological Medicine in the School of Medicine at Cairo; Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

Dr. Naranzi, one of the Secretaries, read the minutes of the 10th meeting.

Dr. Sotto complained that the proposition introduced by him at the said meeting, in regard to the incompetence of the Conference to occupy itself with the question of the tariff of sanitary duties in the Ottoman ports, had not been read when the votes were about to be taken. That proposition, it was true, was reproduced in the minutes; but, notwithstanding his protests, it had not been read, and in consequence no division was taken on it. Dr. Sotto desired that the fact should be recorded.

Several members put forward demands for rectifications in the minutes; these demands were immediately complied with by the Secretary, and the minutes of the 10th meeting were finally adopted.

Dr. Fauvel showed that the discussion which had taken place in the last two meetings, on the labors of the Committee appointed to make the preparatory examination of the questions of the third group, had been rendered useless by the persistence of the members of the committee in rejecting all the proposed amendments, even those which did not attack the general economy of their project. Under these circumstances, he had, in concert with some other members, *viz.*, Count de Lallemand, M. de Krause, Dr. Muhlig, M. Oluf Stenersen, Dr. Baron Hubsch, H. E. Salih Effendi, and Dr. Bartoletti, prepared a sort of proposition or counter-project, the insertion of which in the minutes he asked for in the name of its subscribers. This would enable them to take it into consideration, obviating the necessity for a further prolongation of the discussion of the modifications which a part of the assembly thought it would be useful to import into the classification of the matters of the third group, as the group was understood by the committee. Dr. Fauvel then handed in the following proposition, after having previously read it :—

PROPHYLACTIC MEASURES APPLICABLE TO CHOLERA.

I.—HYGIENIC MEASURES.

1*st.*—Measures of disinfection. Means of disinfection: ventilation; calorification; immersion in water; chemical processes.

Application of these means *to ships*, either for the prevention of contamination, or its destruction; *to luggage and effects, to linen and to merchandise* supposed to be contaminated; *to choleraic excreta, to latrines, to sewers*, in a word, to everything susceptible of propagating the disease.

2*nd.*—Hygienic measures applicable *to towns, ports*, and, generally, to all inhabited localities, comprising the removal of the causes of insalubrity which might favor the development of cholera.

3*rd.*—Measures especially applicable to assemblages of men, to armies, fairs, pilgrimages, and great migrations.

4*th.*—Measures in regard to dispersion in seasons of epidemics. How should it be effected?

5*th.*—Sanitary police of ships in times of cholera. Measures relative to passengers, to their effects, to merchandise, to the sanitation of ships.

II.—MEASURES OF QUARANTINE.

6*th.*—What are the lessons taught by experience, regarding the systems of quarantine in force up to the present moment against cholera? Can we hope for greater success from quarantines established on other bases? What are the fundamental principles deduced from experience, which should serve as guides in this question?

7*th.*—*Temporary interruption* of communications with infected places. In what cases is this measure applicable?

8*th.*—*Temporary restriction* of communications. Is it not advantageous in every respect to restrict emigration from infected localities? By what means may we do so?

9*th.*—*Quarantine applicable to persons coming from an infected locality.*—What should be its duration? From what moment should the commencement of the quarantine be reckoned? In regard to maritime arrivals, should not the duration of the voyage be comprised, under certain specified circumstances, in the time fixed for the quarantine? If so, determine these circumstances? Should two kinds of quarantine be admitted under the names of quarantine of observation, and strict quarantine? In what should the difference consist?

10*th.*—*Lazarettos.*—What are the conditions shown to be necessary by experience, in order that these establishments should answer in every respect to the intention in view in their establishment? Questions regarding the choice of site, the distance from inhabited localities, the facility of landing and supply of provisions, the health of the locality, the kind of building, the interior distribution, and the classification of the persons in quarantine, &c. Lazarettos of observation? Floating lazarettos? Temporary lazarettos?

11*th.*—On the arrival of a ship, can the quarantine be effected on board of her? In what cases, to what extent, and how?

12*th.*—*Sanitary cordons.*—What is the degree of utility of these cordons? Under what conditions are they applicable, and how are they to be applied?

13*th.*—*Isolation and disinfection* of the original foci of cholera. What are the lessons taught by experience on this subject?

14*th.*—*Quarantine applicable to objects supposed to be contaminated, luggage, effects, clothes, goods, live-stock.*—What should be its duration according to the mode of disinfection? Is it always necessary that it should be effected in the lazaretto? Are there any objects which should be exempted from disinfection? What are they?

15*th.*—*Quarantine applicable to ships* supposed to be infected.—Should not a distinction be made between those in which cholera has, and those in which it has not, shown itself? What should be the measures applicable in each case? Should the disinfection always be rigorous?

16*th.*—In the case of a serious epidemic of cholera breaking out on board a crowded ship, should she not be made subject to exceptional precautions? What should these precautions be?

17*th.*—*Bill of Health.*—Should three sorts of bills be admitted; *foul, suspected, and clean*? When should Asiatic cholera be mentioned on the bill, and when should mention of it cease? Is it not absolutely necessary, as a guarantee for the public health, that a ship should have but the one bill of health delivered by the sanitary authorities of the port of departure; and is it not equally necessary that this bill should not be changed until the arrival of the ship at her definitive destination?

18*th.*—*Of survey and search* in times of cholera.

III.—MEASURES TO BE ADOPTED IN THE EAST FOR THE PREVENTION OF THE FURTHER INVASION OF EUROPE BY CHOLERA.

19*th.*—If we weigh, on the one hand, the inconveniences resulting to commerce and to international relations from restrictive measures, and on the other, the disturbance occasioned to industry and commercial transactions by an invasion of cholera, on which side is it thought should the balance incline?

20*th.*—Should we not start with the fundamental principle that the closer to the primitive focus we supply measures of quarantine and other prophylactic means, the more we may reckon upon their efficacy?

1ST.—MEASURES TO BE ADOPTED IN INDIA.

21*st.*—Is there reason to hope that we may succeed in extinguishing cholera in India, or, at least, in restraining its epidemic development? Is it not necessary in the first place to make fresh studies of the *endemicity* of the disease, studies to be made on the spot which will take up much time, and which the English Government alone is in a position to undertake? Show to what special peculiarities these studies should be directed?

22*nd.*—Judging from what we know of the cardinal part performed by *pilgrimages* in the epidemic development of cholera, is it not demonstrated that henceforth all the efforts of the English authorities ought to be brought to bear to restrain the influence of this cause as much as possible, and to continue, on a larger scale, the employment of the measures already in use with some success? Indicate these measures.

23*rd.*—Is it not necessary, moreover, that we should occupy ourselves with the means adapted to the prevention of the *exportation* of cholera from India? Amongst these means, should not a prominent place be given to the establishment of a sanitary police at the place of departure, specially applicable to pilgrims; and in epidemic seasons, to that of the bill of health, &c.? Specify these measures.

2ND.—MEASURES TO BE ADOPTED IN THE COUNTRIES SITUATED INTERMEDIATELY BETWEEN INDIA AND EUROPE.

(*A.*)—*Measures against the importation of cholera by sea.*

24*th.*—Would it not be proper to institute near the entrance to the Red Sea, and in an island, if possible, a sanitary establishment where all

ships entering the Red Sea would be subjected to search, and if necessary, to measures of quarantine? What should be the character of this establishment. In what cases, by whom, and how should these measures be applied?

25*th.*—*Question of the pilgrimage to Mecca.*—Organisation of a sanitary system on the coast of the Red Sea on the one side, in the Arabian ports, and notably, at Jeddah, Yambo, and El Ouesch; on the other at Massowah, Souakim, Cosseir, and at Suez. Sanitary physicians to be stationed at these places. Is there occasion to establish an international organisation? Hygienic measures to be adopted at the places of pilgrimage. Measures to be taken in the Hedjaz in view to the possible importation of cholera overland. Measures to be adopted against arrivals from the Hedjaz if cholera breaks out during the pilgrimage.

3RD.—MEASURES TO BE ADOPTED IF CHOLERA MAKES ITS APPEARANCE IN EGYPT.

(B).—Measures against the importation of cholera by land.

27*th.*—Measures to be adopted on the *Turco-Persian* frontier.

Question of the *Persian pilgrimage.*

28*th.*—Measures to be adopted in Russia against importation *viâ* Bokhara, or, at any rate, by way of the European frontier of the Russian Empire. Measures on the Russo-Persian frontier.

Signed by H. E. SALIH EFFENID.
„ COUNT DE LALLEMAND.
„ DE KRAUSE.
„ OLUF STENERSEN.
„ DR. BARTOLETTI.
„ DR. HUBSCH.
„ DR. FAUVEL.
„ DR. MUHLIG.

M. Segovia, speaking as President of the Committee, expressed his surprise that it could have been reproached with having purposely and deliberately rejected all proposed amendments, when as yet only two paragraphs of the Report, which comprised no less then twenty, had been discussed; and when it had even consented to a modification in the title of the only section yet under discussion. Whatever might be thought of the remainder, the work of the Committee had been approved as a whole, and even in some of its parts, and the counter-project was, therefore, nothing but an attempt of the minority endeavoring to attack the decisions arrived at by the majority: it was an irregular mode of procedure, and one opposed to the usages of all assemblies. After having declared that he did not, however, oppose the insertion of the counter-project, M. Segovia demanded that they should proceed immediately to the nomination of the committee.

Chevalier Pinto de Soveral demanded the continuation of the discussion of the articles in the plan of the committee. The members of the minority might bring forward their observations as the discussion, which could not be regularly interrupted, proceeded.

Dr. Mühlig asked the Conference to recollect that it had not been requested that the counter-project should be discussed. Its authors had perceived the impossibility of getting the Committee to allow any of the modifications, or transpositions, which were necessitated by the classification it had adopted, and they were compelled, therefore, to have recourse to this method of indicating their views.

According to Dr. Gomez, if the reproach of obstinacy was deserved by any body, it was not by the members of the committee, but rather by the authors of the counter-project, *i. e.*, by the minority, which ought to show a little more respect for the decisions of the majority. The counter-project, far from occasioning a gain in time, would have, as its first result, the indefinite extension of an already too-prolonged discussion. Good in itself, it did not contain at the most a single fundamental idea which was not to be found in the project to which it was opposed, and which was in sum, and nearly so, as far as classification was concerned, only the reproduction of the general programme adopted by the Conference. And, after all, would the proposed new classification be freer from objection than that of the committee, and every other classification of the kind?

Dr. Monlau consented to the insertion of the counter-project, even though he considered its presentation irregular, but he insisted that they should proceed to the order of the day.

Dr. Polak concurred.

Dr. Fauvel observed that the discussion became objectless, as soon as they contented themselves with the insertion of the counter-project, and not its discussion. The members who had signed it had, it was true, voted for the general division of the project of the committee, but they did so only because they thought they might usefully bring forward their objections on its discussion article by article. Now, the adoption of the 1st paragraph of the 1st section had, by destroying the entire economy of their system of classification, rendered it impossible for them to do so. The reproach which had been urged against them, of not respecting the decisions of the majority, was not well founded; they admitted they were defeated, and retired from the struggle; but every member of the Conference ought to be responsible for his own opinions; and what could not be refused to the minority was the right of properly stating its views.

Dr. Dickson did not see that the two projects neutralised each other; he proposed that that of Dr. Fauvel should be printed and distributed, in order that it might be utilised as an index or table of contents of the report of the committee.

Dr. Mühlig, who had been Secretary-Reporter to the committee appointed to prepare a draft programme, explained how he had been able to sign the counter-plan without contradicting himself. The general programme was not, and could not be, anything but a table of contents, and it was altogether impossible that they could, when it was elaborated, specify with precision the order in which those contents ought to be studied. Dr. Mühlig persisted in his opinion that the classification adopted by the committee was bad.

Dr. Bartoletti mentioned, in his own name, and in that of His Excellency Salih Effendi, the reasons for which he and his colleague believed that they should adhere to the counter-project. The Delegates of the Sublime Porte, however, reserved their opinion in regard to paragraph 25 of that counter-project, having reference to the pilgrimage to Mecca.

Dr. Sawas saw in the plan of Dr. Fauvel only a lengthy reproduction of that of the Committee, but its presentation appeared to him not the less irregular.

The Persian Delegate demanding, with a great portion of the assembly, that they should proceed to the order of the day, it was decided that the counter-project presented by Dr. Fauvel, and to which three new delegates, Drs. Dickson, Millingen, and Salem Bey, gave in their adhesion, should be inserted in the minutes. The discussion on the articles of the draft of the committee was then renewed.

Dr. Monlau read paragraph 3.

Drs. Bykow and Salem Bey demanded that the part of this paragraph, relating to the *temporary interruption of communications with infected places*, should be transposed to the 2nd section; it was a measure of quarantine, and not a measure of hygiene.

Dr. Monlau replied that what constituted quarantines was the isolation of suspected persons in a special locality where they were kept in confinement. Quarantines, moreover, were obligatory; in fact, the measure was objective, not subjective. There was nothing of the kind in the interruption of communications, which was simply a precautionary measure, leaving perfect liberty to those against whom it was adopted.

Dr. Gomez concurred in this view.

Dr. Bykow would not insist, though he still maintained his observation. Paragraph 3 was then put to the vote, and adopted by a majority of 11 against 8. Paragraph 4 was also adopted, 15 votes being recorded in its favor, its adoption not giving rise to any observations.

Dr. Monlau preceded the reading of the 2nd section with some preliminary observations. The committee started with the principle that it ought to comprise all the questions laid down in the general programme; their order only was changed, and some new ones finally added. After the paragraphs treating of measures of quarantine in general, came the place where they ought to be applied, *viz.*, lazarettos. The Committee only indicated the question of international lazarettos; it did not pretend that it was, or could be, solved. It merely asked itself, on the one hand, whether all, or at least some, lazarettos, should not be declared international, neutralised in fact; and, on the other, whether there was not occasion to determine for all States a certain line which might be called in some sort *Lazarétaire*, and within which a common surveillance, in a sanitary point of view, should be exercised. The committee proceeded then to the length of stay at the lazarettos, and finally to the measures of disinfection, purification, &c., to be prescribed during the stay. If the question of sanitary cordons was reserved for the 2nd section, though this measure might *primâ facie* appear to be

confounded with that of the interdiction of communications, which was included in the first section, it was because the consequence, up to a certain point, of sanitary cordons, was the transformation of the infected country into a local lazaretto.

These explanations given, Dr. Monlau proceeded to read the articles—

Paragraphs 5 and 6 were adopted, the first by 15, the second by 16 votes; none voting against them.

Dr. Lenz demanded the suppression of paragraph 7. The reply to this question, it appeared to him, necessitated studies which nobody in the Conference had made, or was in a position to make.

M. Segovia, on the contrary, believed that it was desirable that this question, which had been laid down by the Sanitary Conference of Paris of 1851, and which had not, it was true, as yet received a proper solution, should be inserted in the programme. Perhaps it might be given to the Conference of Constantinople to arrive at a happier result than had yet been obtained, and to discover a satisfactory reply to it.

Dr. Monlau, declaring at the same time that, to a medical man, the reply could not be doubtful, repeated that the Committee had limited itself to laying down the question without judging it.

M. de Krause pronounced in favor of maintaining the paragraph, which was finally adopted by 19 votes, none against it.

Dr. Bykow expressed his opinion with regard to paragraph 8, that the question of international lazarettos was not in its proper place there. Every thing connected with these lazarettos should be together; the international lazarettos, in fact, would not be established on the same bases as the others.

Dr. Monlau explained that the question was not of the regulation of international lazarettos, but of their very existence itself. Should they or should they not be established?

Dr. Sotto could not exactly understand what these international lazarettos were to be, nor the connection existing between the first and second part of paragraph 8.

Dr. Monlau replied that the committee found the first part of the paragraph in the general programme, and it did not think it could cut it out though it answered itself. The only connection existing between this question and that of international lazarettos was that, the utility of their establishment once admitted, it would be necessary, first of all, to think of the place to be given them. The international lazarettos were an idea, and it remained with the Conference to see what they could evolve from it.

Dr. Pelikan spoke in the same sense.

H. E. Salih Effendi and Dr. Bartoletti declared that Turkey would not consent to the establishment of international lazarettos on her territory; and that, therefore, they could not adopt paragraph 8.

M. Segovia believed that the Committee could not dispense with framing certain questions with which science had long been occupied, and

that it was befitting the dignity of the Conference to pronounce an opinion on them. The admission of a question in the programme did not imply that they ought to vote sooner or later in such and such a sense.

Dr. Dickson desired the excision of the part of the paragraph relating to international lazarettos. It was useless to enter upon the discussion of an impracticable question.

Professor Van Geuns said that he saw, in the very opposition to this question, an argument in favor of its maintenance in the programme.

In the opinion of Chevalier Pinto de Soveral there was nothing impracticable in this idea of international lazarettos. It was a question worthy of study; science could counsel their creation, while it was left to Governments to decide how far they would defer to the advice.

The 8th paragraph was then put to the vote and adopted by 15 against 4; the 9th paragraph was also adopted by 19; the 10th by 19 too; the 11th by 17; the 12th by 18; the 13th and 14th by 17; the 15th by 18; and finally, the 16th by 17. The adoption of these 8 paragraphs met with no opposition.

Dr. Monlau, before reading the 3rd section, explained the reasons which, in the views of the Committee, necessitated the addition of paragraph 20, regarding the despatch of commissions to study cholera in the countries believed to be the birth-places of the disease. It was a wish the Committee thought it might and ought to express, the exclusively scientific character of the researches to be made being given. This character, it should be distinctly understood, was expressly specified in the preamble to the plan, in which the mode of organisation of the commissions which would have to be appointed to carry them was not included. An identical wish had previously been expressed by the Sanitary Conference of 1851: in fact, the following resolution, which was carried unanimously, would be found in the proceedings of that Conference, in which Great Britain was represented by two delegates:—"The Conference expresses the wish that the Powers subscribing to the "sanitary convention, should arrange with each other for the explor-"ation of the localities considered to be the foci of exotic transmissible "diseases, and study uninterruptedly the conditions of the generation "and development of these scourges." The researches in question, the utility of which had been urged by all epidemiologists, were in fine one of the objects specially recommended to the study of the Conference by the circular of His Excellency M. Drouyn de Lhuys. After reminding the Conference, on the other hand, that the general report presented by Dr. Fauvel showed that, in regard to almost every thing connected with the origin and endemicity of cholera, the committee had been obliged, for want of sufficient information, to limit itself to framing the questions without solving them, Dr. Monlau concluded that the dignity of the Conference—its duty even—demanded that it should pronounce an opinion on the means to be employed for filling up a hiatus so much to be regretted. The committee, Dr. Monlau added, had not wished in any way to pre-judge the question; but it could not permit any doubt to rest upon the anxiety of Great Britain and the

other Powers having possessions in India to associate themselves with studies interesting to all mankind.

The discussion of the 3rd section having been postponed, in consideration of the lateness of the hour, to the next meeting, the Conference adjourned to Monday, the 4th June, at noon, after having decided, by a majority of 17 against 2, that in future it would assemble three times a week, on Monday, Thursday, and Saturday.

The meeting then dispersed at 4-45 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI. } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 12, OF THE 4TH JUNE 1866.

H. E. SALIH EFFENDI,—*Presiding.*

The International Sanitary Conference held its 12th meeting, at Galata-Serai at noon of the 4th June 1866.

PRESENT:

For Austria :

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty the Emperor of Austria.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

For Belgium :

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain :

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States :

Dr. Ignace Spadaro.

For France :

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain :

The Hon. M. W. Stuart, Secretary to Her Britannic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece :

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy :

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands :

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to his Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His most Faithful Majesty.

For Prussia :

M. H. de Krause, Secretary of Legation to His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician of the Hospital of the Ottoman Marine.

For Russia :

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Olúf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to his Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt):

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

M. de Krause received permission from the President to speak in order to communicate a most important telegram received by him from Alexandria, which ran as follows:—

(Telegram)

Alexandria, May 31st, 1866, 3-40.

TO THE PRUSSIAN LEGATION,

Constantinople.

"On the thirtieth and to-day, two ships arrived at Suez from Damedas with pilgrims: bills of health state that an epidemic (of what disease not stated) was raging at Jeddah. They are in quarantine. 106 deaths from the 26th to the 29th. At Suez, two cases of virulent fever, choleraic symptoms, one of them fatal: yesterday a death here from sporadic cholera. Intendancy gives clean bills."

(Signed) THEREMIN.

(True Copy.)

ROMANO.

Pera Office, despatched at 4-10, 31st May 1866.

After reading this telegram, M. de Krause begged that the Turkish Delegates would be good enough to let them know whether they possessed any documents containing information on the subject. He also invited any other Delegate in a position to give information to be good enough to do so.

Dr. Bartoletti read a report, dated the 28th May last, addressed by Colucci Bey to the Sanitary Intendancy of the capital. In this report it was stated:—

"Since the beginning of the current month an increase has been remarked in the number of daily deaths at Suez. On the 24th May

the deaths, from the first of the month, had already amounted to 33 (the population of Suez is about 4,500.)"

This increase in the deaths was mainly attributed to the quality of the water furnished by the fresh-water canal, the current of which was very weak at this season, and the water, becoming almost stagnant, corrupts easily. The authorities were about to take steps to provide Suez with better water.

"On the 26th May," the report went on, "a very serious fatal case was reported attributed to a virulent fever, which carried off the patient after an illness of seven hours only."

M. Bartoletti communicated another despatch (in Arabic), sent by the Sanitary Council at Alexandria, and received that morning.

The translation made of it was far from conveying its exact meaning, but it would appear, however, that on the 18th Mohurrum (*i. e.*, the 2nd June) some attacks, believed to be beyond doubt cases of cholera, had occurred at Jeddah.

M. Bartoletti extracted from another report addressed to the Superior Council of Health, the following information regarding some parts of Syria.

Beyrout, June 2.

"The medical officer sent from Acre to Tiberiad reports the existence of cholera there: 12 cases and 3 deaths from the 24th to the 31st May. In concert with the Governor-General, we have this morning sent Dr. Koutoufa to Tiberiad, and taken proper measures."

Beyrout, June 3.

"Amend as follows my telegram of yesterday:—At Tiberiad, from the 24th to the 31st May, 24 attacks of cholera and 10 deaths. Such is the report of our doctor at Aden and our employé at Caifa, who has this morning returned from Tiberiad to Acre."

Following on these communications, a long discussion ensued between Messrs. Fauvel, Bosi, Van Geuns, Polak, Mühlig, and Segovia, with the object of arriving at a mutual understanding:

1st.—As to the authenticity of the serious news communicated by M. de Krause.

2nd.—As to the necessity of confirming the information and having precise and truthful reports.

3rd.—As to the necessity, considering the gravity and urgency of the facts, of acting with energy and promptitude to prevent any invasion of the capital by cholera from Egpyt.

Constantinople was, it was said, so much the more exposed to another invasion by cholera because fresh Egyptian troops were shortly expected there.

Several speakers, after having demonstrated the imminence of the danger and the necessity of acting in opposition to the assurances furnished

by the Egyptian Sanitary Intendancy, which gave clean bills notwithstanding the probable existence of cholera in Egypt, spoke of the greater or less confidence it deserved.

According to M. Polak, no such confidence existed—according to others, though it might exist, nobody, in this grave crisis, could rely either upon its reports, or its appreciation of the danger, or the measures adopted by it.

Other speakers took up the defence of the Sanitary Council of Alexandria. Anyhow, said M. Bartoletti, the International Sanitary Conference was not called upon to criticise and still less to draw up an indictment of the Egyptian Sanitary Intendancy. It had quite another mission.

Several Delegates brought forward propositions adapted to the gravity of the circumstances. They were as follow in the order of their presentation.

First proposition by M. de Krause :—

1st.—The Conference expresses the wish that the Turkish Delegates should telegraph at once to Alexandria for more ample details regarding the sanitary condition of Egypt and especially of Suez.

2nd.—That the sanitary condition of the Egyptian troops arrived at Constantinople should be strictly watched.

3rd.—That the Egyptian troops expected at Constantinople should be subjected to strict inspection before passing the Dardanelles.

4th.—That if the telegraphic advices from Egypt are not entirely reassuring, arrivals from Egypt should be regarded as coming under foul bills of health.

First proposition by M. Monlau :—

That the Conference should, until further orders, subject arrivals from Egypt to a quarantine of observation, and declare them to be under foul bills, notwithstanding the *clean* bills of health given by the Egyptian sanitary authorities, and that this should continue until the serious news just communicated to the Conference were either confirmed or proved to be unfounded.

M. Monlau said that this apparently very severe measure was suggested by the expected arrival of fresh Egyptian troops at Constantinople. It would be very sad were cholera, for want of efficacious measures at Constantinople, to penetrate to that city, while the Conference was sitting there.

M. Fauvel pointed out to M. Monlau that his proposition went too far. The Conference, he said, had not the right of ordering—it could only give expression to wishes and advice—and to this it should confine itself in this matter.

M. Bartoletti spoke to the same effect, and demonstrated moreover that what remained to be done was the concern of the Council of

Health, on which it was incumbent to order measures and carry them out. It was necessary, M. Bartoletti added, to have entire confidence in the sanitary administration of the capital—it watched unremittingly over the sanitary condition of Egypt, as was fully shown by the reports it had furnished to the honorable Conference, which were at the same time a guarantee of its desire and its efforts to prevent the invasion of the capital by another epidemic.

The Superior Council of Health, he said, had already adopted measures of a nature to reassure the Conference. These measures were more complete than those of last year: they consisted of a much more serious quarantine (one of 15 days, not reckoning the days occupied by the voyage) and the establishment of several lazarettos.

M. Monlau declared he had not made use of the word *órder*, and had at once protested against its being attributed to him. What he thought he said was:—That the Conference should *express* the desire, if the serious information is confirmed, &c., &c.

M. Mühlig strongly insisted on the necessity of adopting efficacious measures if they did not want a repetition of the deplorable state of things of last year, which, he thought, was inevitable if they did not oppose the transport of Egyptian troops to Constantinople and he proposed:—

1*st*.—To forbid the arrival in Constantinople of fresh Egyptian troops.

2*nd*.—To prohibit, or at least restrict, free communication between Egypt and Constantinople.

M. Segovia supported MM. Monlau and Mühlig. The Conference, he said, possessed the right, considering the urgency of the matter, of expressing a wish of the kind.

M. Sawas presented this proposition in a form which, he thought, quite carried out the wishes of all. It was this:—That the Conference, while waiting for further advices from Egypt, should express the wish that arrivals from Egypt should be considered as under *foul bills of health*.

M. Monlau accepted this form, as also MM. de Krause, Mühlig, Stenersen, Count de Lallemand, Fauvel, and de Soveral.

M. de Krause, on his side, withdrew the 1st and 4th points of his proposition in favor of the form adopted, on the amendment of M. Sawas, by M. Monlau himself.

M. Bartoletti admitted that the Conference had the right of expressing desires and of giving advice—advice, he said, which the Sanitary Intendancy of the Empire would receive and treat with all the deference it deserved; but he insisted on the necessity and propriety of leaving to the Sanitary Intendancy full and entire liberty of action. M. Bykow supported him.

M. Sawas said that in the previous meeting he had opposed the taking up of the question of Egypt by the Conference, and he had stated

the reason why he considered that question beyond its competence. The Conference, he added, having decided differently, it was necessary that it should express an efficacious desire and one of real practical utility.

M. Bosi reminded the Conference that it had only lately proclaimed its incompetence to enter upon the affairs which, it had been desired, it should take up, and which he believed to be within the province of the Council of Health. M. Bosi also pointed out to M. Bartoletti that, when sitting in the Conference, he should forget that he belonged to the Council of Health, for he thought that his words had no more value than was given them by his being a Delegate of the Ottoman Government.

M. Bartoletti replied that he had always spoken as such and never otherwise, and that it was so with H. E. Salih Effendi.

M. Bykow's proposition :—

1*st*.—To invite the Council of Health to telegraph to Alexandria and to the Tiberiad for precise and official information regarding the sanitary state of Egypt and Syria.

2*nd*.—To leave the Council of Health to act as it might think proper upon such information.

M. de Krause, after having pointed out the authenticity of the despatch he had first communicated, considering that it was sent by the Consul-General at Alexandria, added that he would himself be very glad to see it confirmed, because its rather obscure wording made some points unintelligible.

M. Bosi's proposition :—

"That the Sanitary Intendancy should appoint a committee on the Egyptian troops with a view to reporting on their sanitary condition."

M. Vernoni's proposition :—

"That the troops expected from Egypt should be inspected before their arrival in the capital, at the Dardanelles for instance."

M. Keun's proposition :—

"That arrivals from Egypt and Beyrout should be subjected to a quarantine of observation until the confirmation of the news given by M. de Krause."

M. Maccas said that notwithstanding the strong impression at first made on him by M. Monlau's proposition, *viz*., to consider arrivals from Egypt under *clean bills* as being under *foul* bills of health, yet he supported this proposition in its entirely. That which, at the first glance, appeared repulsive and irregular, observed M. Maccas, in the proposition of M. Monlau, altogether disappeared if it were observed that it only referred to bills from Alexandria delivered after the date of the news just communicated and also, it should be distinctly understood, if they were to reflect that that proposition was not to be carried into

effect except *conditionally* on the news being confirmed. In that case, said M. Maccas, we would not be wrong if we were to look upon clean bills as being foul bills, for, under such circumstances, stricter measures could not be adopted for the protection of the capital and, by it, of several countries, from another invasion.

M. Bartoletti was of opinion that they must not confound facts appertaining to Egypt with facts relating to Syria. The latter were within the scope of the Sanitary Council of Constantinople, and consequently it was for it to act, whilst Egypt had a special sanitary administration.

As for the Committee on the Egyptian troops at Constantinople proposed by M. Bosi, M. Bartoletti would only remind them that, according to all appearances, the troops had left Egypt before the manifestation of cholera at Suez.

Acting on the opinion of Count de Lallemand, supported by several Delegates, His Excellency the President put to the vote the proposition of M. Monlau, amended by MM. Sawas and Mühlig, and then the two propositions of M. de Krause.

M. Monlau's proposition was in the following form :—

The Conference expresses the desire :—

"That the Council of Health will be good enough *immediately* to ascertain the correctness of the information communicated to the Conference regarding the sanitary condition of Egypt, and, meanwhile, in the estimation of the Conference, arrivals from Egypt should be subjected *at once*, by the proper authorities, to the conditions of foul bills of health."

This proposition was adopted by a majority of 22 votes against 3 ; M. Vetsera declining to vote.

His Excellency the President immediately afterwards put to the vote the proposition of M. de Krause, comprising two distinct points, as follow :—

1*st*.—That the Egyptian troops who had already arrived should be attentively watched.

2*nd*.—That the Egyptian troops expected at Constantinople should, in addition, be subjected to a strict inspection before passing the Dardanelles.

The proposition was accepted by a majority of 22 : 4 declined to vote.

The Conference decided on passing over the other propositions without dividing.

M. Vernoni proposed that His Excellency the President would be good enough to communicate *without delay* to His Highness the Grand Vizier and His Highness Aali Pacha, the resolutions just adopted by the Conference.

M. Pinto de Soveral modified M. Vernoni's proposition as follows :—

"That His Excellency the President would be good enough to adjourn the meeting in order that he might be able to proceed immediately to their Highnesses, and inform them of the decisions of the Conference."

M. Segovia observed that the proposition of M. Pinto de Soveral, comprising two points not absolutely dependent on each other, should be divided in two, and each part separately voted for.

Following the advice given by Count de Lallemand, who supported M. Segovia's remark, His Excellency the President put to the vote the second part of M. de Soveral's proposition, which consisted in begging His Excellency Salih Effendi to be good enough to proceed immediately to the Grand Vizier and His Highness Aali Pacha in order to communicate the deliberations of the Conference to them. (M. Vernoni's proposition.)

It was accepted by a majority of 22 : 4 declining to vote.

The first part was rejected, having only two votes in its favor. The meeting in consequence was continued after His Excellency Salih Effendi's departure.

The Hon. Mr. Stuart observed that he, as well as both his colleagues, had abstained from taking part in the discussion, and from voting on the subject of the different propositions, and the resolutions the Conference had just taken.

M. de Vetsera also spoke about his having refrained from voting.

On His Excellency leaving the hall, the Conference appointed Count de Lallemand to replace him.

After an interval of a quarter of an hour, the meeting was resumed under the presidency of Count de Lallemand.

The order of the day, said Count de Lallemand, was the continuation of the discussion on the Report of the Committee appointed to examine the 3rd group of the programme. The discussion had been interrupted at the last meeting, at the commencement of the 3rd section of the report.

M. Monlau begged M. Segovia to be good enough to take his place, as he was prevented by indisposition from resuming the reading.

M. Polak begged that he might be allowed the favor of speaking having, he said, some important considerations to bring forward regarding the 3rd group of the report in question, a group which, he thought, demanded special and preliminary researches.

Having obtained the permission he sought, M. Polak read the following propositions :—The Conference, he said, should rate them at their proper value and judge of the importance of the researches he was about to propose :—

1*st*.—What are the principal localities for pilgrimages and fairs in Asia? What are the routes leading to them? By what nations and

peoples are they frequented? What is the average number of pilgrims? What are the points of assemblage and separation? What are their means of transport and communication? What shelter have they during the journey? What is their supply of provisions? What time do they require for their journey to and fro? Do they follow the same route in going and returning? Is the pilgrimage confined to a certain epoch or season of the year?

2nd.—What pilgrims touch upon continental Europe?

3rd.—To what diseases are they most exposed at ordinary times? What is their average mortality?

4th.—In cholera seasons is it better for them to travel overland or in steamers, or in sailing ships?

5th.—Is it possible, and how, to avoid overcrowding during the journey across India or through the Red Sea?

6th.—Is it possible to maintain a surveillance over Arab sailing vessels in the Persian Gulf, especially at Muscat, Bunder-Abbas, and Bassora, and in the Red Sea?

7th.—Is it possible to maintain a surveillance over communications overland from India to Persia and Russia?

8th.—Is it possible to do away with the inconveniences of the transport of corpses to Kerbelah, and how?

9th.—Indicate the most important points by which cholera has passed from India into Persia and Russia?

10th.—Show why cholera has never been transmitted to Egypt or Europe by mail steamers from India, and ships doubling the Cape, while it has been transmitted by coasting vessels proceeding to Arabia or Zanguebar?

11th.—In what time after the commencement of an epidemic in India does cholera pass on elsewhere?

12th.—What is the maximum number of pilgrims carried by a steamer?

M. Polak said, in conclusion, that these were, properly speaking, only details of which it was necessary to be in possession in order to enter, with a knowledge of the causes, upon the questions indicated in the 3rd section of the report.

M. Segovia admitted the importance of many of the details enumerated by M. Polak, but he thought that the knowledge and study of these details would find their place as the questions with which they were connected were brought forward in the discussion. To try to study them by themselves, he observed, would only serve to complicate the discussion, for, as M. Polak himself felt, his propositions only comprised questions of detail which it was necessary to take into consideration.

"The Conference, and M. Polak also agreed with M. Segovia."

M. Segovia commenced reading the 3rd section.

M. Bykow proposed to expunge the word *special* from the title of this section, because, he said, there were no special sanitary measures, it not being possible for these measures to be other than hygienic or measures of quarantine.

The Committee, replied M. Segovia, did not tie itself down in the least to words, unless they were *necessary* : the word *special*, he said, had a certain importance for the Committee, for it served, accessory as it was, to make it understood that the same measures, applicable equally to the West as to the East, ought to be applied to the East *in quite a special manner.*

M. Sawas supported M. Segovia, and proposed that they should proceed to vote.

The title was adopted as it stood.

M. Sawas made some observations in regard to paragraph 17.

He thought that the leading idea would be more distinct if, after the first part of the paragraph, the phrase "based on the study of the routes followed by cholera" were intercalated.

The paragraph was adopted, with the addition proposed by M. Sawas, by a majority of 17 against 10 who declined to vote.

Paragraphs 18 and 19 were adopted as they stood by a majority of 15 against 12 who declined to vote.

The Hon. Mr. Stuart asked leave to make some observations on paragraph 20.

This paragraph, he said, as conceived and framed by the Committee, could not be accepted by the British Delegates. They could not, in any case, support the creation of an International Commission.

A Commission, he said, having a character of this kind, would almost be an attack upon the independence of Governments having possessions in India.

The task of undertaking in their own domains the enquiries and studies demonstrated by science to be necessary was incumbent on each Government itself.

Influenced by these considerations, and by many others which might be added, Mr. Stuart proposed the substitution of the following paragraph for the 20th :—

"To invite the attention of the respective Governments of the countries believed to be the birth-places of cholera to the utility of undertaking or continuing strict local enquiries upon the generation and propagation of the disease."

To enumerate the questions the solution or better knowledge of which has been shown by science to be necessary.

M. Segovia, in his own name and in the name of the majority of the Committee, refuted the considerations urged by the Hon. Mr.

Stuart. In M. Segovia's opinion, the divergence of view between the British Delegates and the members of the Committee who had accepted the 20th paragraph, arose more from a misunderstanding than anything else. The fear also of attacking the independence of Governments had prejudiced them against the Committee's proposition. But, said M. Segovia, who had ever dreamt of attacking or lessening the independence of Great Britain, or of other States? When, where, and how had the Committee ever made use of such an expression? The Committee, which had no other object but that of advising the creation of a special scientific Commission for the study of the generation and development of cholera, did not refuse to accept the form proposed by the Hon. Mr. Stuart. What it required was that the motives which had actuated the Committee in framing the paragraph brought into question should be properly understood. M. Segovia said he would not repeat these motives, for M. Monlau had already made them known when he demonstrated that what the Committee had in view was a purely scientific Commission. The advice to nominate scientific Commissions had long been followed, and they had been sent everywhere. The Committee, in framing the 20th paragraph of its report, had believed it was complying with a pressing necessity. The generation and development of cholera had been enveloped in obscurity—enquiries had, it was true, been made for a long time past, but they were very incomplete—indeed, so far from being complete, they had as yet only arrived at the enunciation of the problem. These enquiries, and a profound study of the question, were demanded by science. With this object, the Committee proposed the nomination of a special scientific Commission. In doing so it had not only not intended to wound any body, but it had thought it was acting in the interests of the British Government itself, at the same time showing its own independence.

In fact, continued M. Segovia, the creation of a special scientific Commission would greatly facilitate the duty of English medical men. Its authority would be all the greater for the double reason that it would not be national, and that it would preserve entire liberty of action. Not being under the pressure and influence of the Government, this Commission, chosen by some scientific academies, would make a local study of cholera, would place its foot upon its cradle, and would have full liberty of word and action, even if it proceeded to combat the preconceived views of the Indian Governments,—not only the Government of Great Britain, but also the Governments of French, Spanish, Portuguese, Dutch, and other Indies.

Such were the reasons, said M. Segovia in conclusion, which had influenced the greater part of the Committee in adopting the 20th paragraph.

Mr. Stuart replied to M. Segovia that the British Delegates had not the least intention of placing an obstacle in the way of scientific Commissions being sent to India for the purpose of making enquiries and studies upon cholera. They simply opposed the project of despatching an International Commission.

Dr. Goodeve put forward the following considerations in support of the observations of his colleague the Hon. Mr. Stuart:—

"I wish to persuade the Conference that we have not the least intention of rejecting the project of making scientific studies of cholera in India. We admit the utility of such studies: but we dispute the idea of instituting an *International Commission*, an idea arising from what has been said by Messrs. Monlau and Segovia.

"I am of opinion," continued Dr. Goodeve, "that my Government would not accept an International Commission to make enquiries into cholera amongst us, and, on this subject, I am entirely with Mr. Stuart, for I too think that we deal here with a proposition which is *injurious* to Governments, at the same time that it displays a want of confidence in the intelligence of the country in which it is desired to undertake these studies.

"The opinion has been expressed also that the utility of this International Commission is demonstrated by the small knowledge we have in Europe of cholera as it exists in India. Nevertheless, I believe that knowledge of the generation and development of cholera is not only not wanting, but that it is as abundant and considerable as is the knowledge we possess of many other epidemic diseases. What do we know, for instance, of the generation and development of variola and scarlatina? Fifty years only have passed since the scientific world has found itself face to face with cholera, and it may be said without fear of contradiction that our knowledge of it is as extensive as that which we possess of other diseases with which we have been acquainted for ages past.

"Though the argument is valid," continued Dr. Goodeve, "so far as the necessity of undertaking enquiries is concerned, it is not specially applicable to cholera to the point of despatching an International Commission for the purpose.

"A friend of mine has remarked to me, and I cannot but agree with him, that the despatch of an International Commission to our territories for this purpose means either that we are wanting in willingness to institute scientific researches into this disease, or in the capacity of conducting them to a termination. In regard to the capacity, I believe I may say, without being charged with excessive partiality for my own country, that the English have not been left behind by other nations in regard to the original study of cholera either in India or elsewhere, and that our literature affords proofs of the fact. I believe that the goodwill is not wanting either. I believe, therefore, without going further, that the English are capable of undertaking the researches indicated, and that nothing would be lost by confiding in their intelligence and goodwill.

"Whatever may be the result of the studies, which, I hope, will soon be entered upon, I submit my opinion to the Conference, *viz.*, that they should not be undertaken, as Mr. Stuart has very justly remarked, except by the respective Governments of the countries where cholera prevails."

M. Sawas summed up M. Segovia's remarks in a few words:—His desire was to demonstrate, *1st*, the utility of studies of cholera carried out by a special scientific Commission; *2nd*, that this Commission was a practical idea; *3rd*, that there was nothing hurtful in it—no want of confidence, no attack upon the independence of the British Government, in the proposal of the Committee. M. Sawas confessed that he shared the opinion of M. Segovia in regard to the utility of such a Commission, only he believed that it would be found impracticable. In fact, how could a foreign Commission undertake enquiries in such a vast and distant country as British India? The British Government alone, in his opinion, was competent to do so. He proposed, in consequence, that Mr. Stuart's proposition should be put to the vote, and that they should proceed to the order of the day.

M. Fauvel and several other Delegates observed that the question was so important that it was necessary to listen to every member who might choose to speak for or against it.

M. Gomez said he wished to state that all the members of the Committee were not agreed as to the manner of considering the continuation of the study of the generation and development of cholera in India, as well as the continued investigation of modes of sanitation. They were only agreed as to the propriety of entering the question in the programme in terms so vague as to leave the mode of executing the measure quite unbiassed. The amendment proposed by the Hon. Delegate of Great Britain, Mr. Stuart, fixed this mode of execution in very fitting terms and in the most practical manner. He (M. Gomez) concurred in and approved of Mr. Stuart's views, and he did so all the more willingly that, independently of the inconveniences, and even the very easily appreciable unfitness which would result from the plan of introducing in India *official investigations* ordered by other than the respective Governments, no Government was so interested as that of Great Britain in every thing relating to the sanitation of India, and none more than it possessed for its accomplishment, within the limits of the possible, such means of execution as could be furnished by science or otherwise. And a proof of this might be given, added M. Gomez, taken from authentic documents, in the sufficiently remarkable results already obtained, thanks to the measures adopted in the different provinces of British India, especially of late years. In conclusion, M. Gomez said he would vote for Mr. Stuart's amendment.

M. Monlau, after having spoken to the same purport as M. Segovia, the greater part of whose ideas developed by new considerations, read the 3rd page of the report under discussion. In this page, he said, was to be found, not only the confirmation of the ideas of himself and his honorable colleague, in regard to the necessity of creating a scientific Commission, but also the original thought of the Committee, which had not the least idea of imparting an international character to the Commission proposed by it. In fact, said M. Monlau, what was mentioned there was a *scientific* Commission, whose mode of organisation and the plan of whose labors might be settled and even ordered beforehand

by the respective Governments of the countries which were to be the theatre of its purely scientific studies. Fifteen years ago, added M. Monlau, the Paris Conference had expressed a similar desire, and at that time it had been supported by the British Delegates; at present they would not agree to it, and the reason of all this might be found in the intervention of the diplomatic element.

M. Polak declared that he entered fully into Mr. Stuart's views. An International Commission, he said, could not complete the work proposed to be assigned to it in less than two years, but this work might be perfectly carried out by the English Government. English physicians, he thought, were more competent than any others to undertake with success the researches demanded by science, which had been enriched by them more than by any others with valuable documents and studies of the highest importance. As an instance, he quoted the memoir of Mr. Jameson, which, in his opinion, was superior to any other that had yet been published on cholera.

M. Segovia begged that the Secretary would accurately report M. Polak's declaration.

M. Van Geuns agreed with Mr. Stuart in every point, and accepted his amendment.

M. Fauvel was of opinion that the project of a Commission, as it had been conceived, that is, possessing an international character, could not be of any use. M. Fauvel understood and shared the scruples of the British Delegates. Such a Commission, he said, ought of necessity to be invested with a political character, unless it was wished to make it a collection of tourists. To do anything serious and useful in India, an International Commission would have to struggle with almost insurmountable difficulties, difficulties inherent to the nature of the studies which it would be necessary to undertake. In any case it could not finish its studies and researches until many years had passed.

M. Fauvel was also of opinion that the English Government could of itself alone undertake these studies with advantage. It afforded every guarantee that such a task should be confided to it. M. Fauvel summed up his observations in these terms:—

It is neither useful nor convenient to propose an International Commission. Not only the British Government, but also all the other Governments having possessions in India, would not agree to accept a Commission of this sort. Let the Conference then limit itself to counsel things that are practicable, fitting, and useful.

M. Bykow altogether rejected the project regarding India, so far as the Commission mentioned in the programme was concerned. He fully supported the proposition put forward by Messrs. Stuart and Goodeve.

M. Bartoletti declared that he concurred in every thing that M. Fauvel had said.

M. Pinto de Soveral said that, speaking as a Delegate of a Power having possessions in India, he concurred in the proposition of the Hon. Mr. Stuart, which he supported, and he would vote accordingly.

Count de Lallemand, at the request of the Conference, which declared that it had heard quite enough of the subject, put paragraph 20 of the 3rd section to the vote.

It was rejected by a great majority. Next was put to the vote the proposition put forward by Mr. Stuart in substitution of the above mentioned paragraph. It was adopted by a majority of 18 against 8 who declined to vote.

Votes in favor:—

MM. Vetsera, de Noidans, Sotto, Fauvel, Stuart, Goodeve, Keun, Van Geuns, Malkom Khan, Sawas, de Soveral, de Crause, Mühlig, Bykow, Stenersen, Hübsch, Bartoletti, Count de Lallemand.

The other Delegates refrained from voting, including MM. Segovia and Monlau, who wished their abstention to be placed on record.

Count de Lallemand invited the honorable Conference to be good enough to state the manner in which it intended to proceed in the consideration of the numerous and various questions comprised in the three groups of the report which had just been discussed.

M. Sawas observed that the Committee had already proposed the formation of three Committees.

Count de Lallemand, on the motion of M. Segovia, put to the vote the last paragraph of the report regarding the three Committees.

It was accepted by a majority of 17 against 2—seven abstentions.

Count de Lallemand, supported by M. Fauvel and other Delegates, made the following proposition:—

"That the entire Conference divide itself into three Committees, and that their procedure be the same as that of the Committee appointed to consider the two first groups of the programme. That is to say, that the members to compose each of the three Committees be drawn by lot, with this difference that each Committee shall comprise an equal number of diplomatic Delegates."

In consideration of the late hour, Count de Lallemand, at the request of several Delegates, postponed the definitive arrangement of the three Committees to the next meeting.

The meeting closed at 5 p. M.

Order of the day for the next meeting:—

1*st.*—Nomination of the three Committees and everything regarding their constitution and organisation.

2*nd.*—Discussion of the general Report.

COUNT DE LALLEMAND,
President.

DR. NARANZI,
BARON DE COLLONGUE, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 13, OF THE 7TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirteenth meeting on the 7th June 1866, at Galata-Serai.

PRESENT :

For Austria :

M. Vetsera, Councillor of the Imperial and Royal Internonciature.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

For Belgium :

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

For Spain :

Don Antonio Maria Segovia, Consul-General, Charge d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States :

Dr. Ignace Spadaro.

For France :

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain :

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece :

M. Kalergi, Secretary to the Legation of His Hellenic Majesty.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy :

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands :

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Mirza Malkom Khan, Aide-de-Camp-General to H. M. the Shah, and Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Charge d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Physician to His Most Faithful Majesty.

For Prussia :

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia :

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, College Councillor, attached to the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Medical-Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway :

M. Oluf Stenerson, Chamberlain to H. M. the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey :

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

For Egypt :

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of H. H. the Viceroy of Egypt.

The sitting commenced at noon.

Baron de Collongue, one of the Secretaries, read the minutes of the 11th meeting.

The minutes being adopted, H. E. Salih Effendi gave an account of the communication he had made to their Highnesses the Grand

Vizier and the Minister for Foreign Affairs of the desires expressed by the Conference relative to the precautionary measures to be adopted in regard to arrivals from Egypt. His Excellency left it to his colleague, Dr. Bartoletti, to inform the Conference of the resolutions adopted by the Superior Council of Health and the Sanitary Intendancy.

Dr. Bartoletti stated that the Superior Council of Health, while it took the wishes of the Conference into its serious consideration, did not think it necessary to take a decisive measure, that is to say, to subject clean bills to the same regulations as foul bills of health, before the receipt of the information immediately telegraphed for to the Sanitary Intendancy at Alexandria regarding the state of the public health in Egypt, confirmatory of the grave news supplied by M. de Krause. It had, therefore, only been decided that ships arriving from Egypt with clean bills of health should, until further orders, be subjected to a quarantine of observation, the Council leaving it to the Sanitary Intendancy to prescribe, if necessary, severer measures in the Dardanelles as well as in all the other ports of the empire. These measures were adopted on the 5th. On the 6th the reply of the Egyptian Sanitary Intendancy, thus conceived, was received:—"Public health perfect, some cases of virulent fever at Suez. Cholera exists at Jeddah and Yambo." This news not appearing to necessitate the maintenance of the quarantine of observation, Dr. Bartoletti announced that the Sanitary Intendancy had in consequence countermanded the orders sent the day previous to the Dardanelles. Dr. Bartoletti added that the Superior Council of Health had received other despatches, of older date it was true, but which contained better information on the state of health in Egypt. According to one of these despatches, on the 14th May, at Jeddah, there were not more than 2,000 pilgrims bound for Yemen, the coast of Africa, the Persian Gulf, and India: 5,000 had left for Suez on board eight steamers. The authorities, who looked after their embarkation with the greatest care, were to exercise the same strict control at Yambo, where measures were being taken in view to the embarkation of the pilgrims who had left Mecca for Medina.

Dr. Salem Bey, who had not been able to be present at the previous meeting, expressed his regret that he had not been there so that he might have been able to reassure the Conference. The following despatch, addressed by the Minister of the Interior in Egypt to Riaz Pacha, Secretary to His Highness the Viceroy, enabled him to do so most completely.

Translation of a despatch in cypher from H. E. Scherif Pacha, Minister of the Interior, dated the 20th Mohurrum 1283 (*4th June* 1866.)

"We have received a telegraph message from the Governor of "Suez, informing us that the steamer *Dosok* from Jeddah, had been "subjected to a medical inspection, and that all the passengers, amount-

"ing to 150 in number, had been found in a state of pefect health. "Nevertheless, the vessel was placed in quarantine, because it was "stated on its bill of health that an epidemic disease existed at Jeddah. "From the same message we learn also that the steamers *Ibrahimia* "and *Sidna* had left Massowah for Jeddah; that the *Ibrahimia* arrived "at Suez from Jeddah, and was placed in quarantine there, its bill of "health being also suspicious.

"But, on the other hand, we have learnt from the telegraphic "message sent by H. E. Ismael Sadik Pacha, and which arrived in "the abovementioned vessel, as well as from her chief officer, Ali "Capitan, that since her departure from the port of Massowah there "had been no trace of the disease on board: only the consular agent "at Massowah had sent a letter to the French consul resident at "Jeddah, in which it was said that cholera existed at Massowah; also "that letters had been received by merchants and physicians at Jeddah, "announcing that cholera had developed itself at Medina, Mecca, and "Yambo, and that it was for this reason that a suspected bill of health "had been furnished to vessels on their departure. For this reason "the Captain of the *Ibrahimia* went on board the *Sidna* and returned "to Massowah to ascertain if cholera really existed there, and the "Captain of the *Sidna* came to Suez in the *Ibrahimia*.

"In that vessel there were 409 passengers composed of soldiers, "officers, women, and servants. All arrived in good health, and there "were no deaths among the passengers on board both these ships. "Now, since, on the other hand, it is proved, from authentic informa- "tion, that there was no sickness either at Medina or Mecca during "the pilgrimage, and that none took place either amongst the crews "of these two vessels which traversed these localities, or amongst the "passengers, or amongst those who arrived by the *Dosok*, the current "rumor is entirely contradicted.

"On the return of the *Sidna* from Massowah the truth will be "known.

"Copies of the telegrams mentioned were sent for information to "the Sanitary Intendancy. Thank heaven, there was no trace of the "disease in those localities or among the pilgrims.

"The President of the Sanitary Intendancy, however, came here "to-day, and stated that though the report had been spread that cho- "lera had manifested itself on the departure of the Medina caravan, "the report was without any foundation, and no reliance should be "placed in it, considering that no information on the subject had been "received from Hussan Effini Hackim.

"The reason why clean bills of health were not given is, as an- "nounced by new arrivals from Jeddah, because there had been nine "deaths at Jeddah in one day, and the doctors declared that two of these "nine had died of an epidemic disease; but epidemic diseases are of many "kinds, and what has been said should not cause us any alarm.

"Nevertheless the Sanitary Intendancy has deemed it advisable to "give orders to the governors of Jeddah and Massowah to interrupt the "voyage of the pilgrims towards Egypt, and to the directors of the "Azizieh Company not to receive them on board their vessels, these "being precautionary measures on account of the doubt existing on the "subject, conformably to the decisions adopted by the International "Sanitary Conference at Constantinople. The necessary orders for "their execution were given in consequence. The agent of the English "Company has also received orders from the British consulate not to "receive the pilgrims on board English vessels. We hope these rumours "will be speedily contradicted, so that we may be able to report ac-"cordingly immediately."

Dr. Salem Bey then communicated to the Conference a despatch from Dr. Colucci Bey, announcing that, in consequence of the occurrence at Suez of some cases of algid virulent fever attributed to the bad quality of the water of the canal resulting from the lowness of the Nile, the Egyptian Government had at once taken the necessary measures for providing the town with better water. The same despatch noted the good state of health of the population as well as the pilgrims.

M. de Krause pointed out the contradictions existing between the various despatches communicated to the assembly. All these despatches represented the state of the public health as completely satisfactory, and yet they were unanimous in stating the existence of cholera in certain places, and, in other localities, the increase of mortality from diseases of a suspicious nature. M. de Krause submitted the following proposition to the Conference:—

1st.—The Conference expresses the wish that, in the event of the news received from Alexandria proving to be of a nature to raise apprehensions of the spread to Egypt of the epidemic actually existing at Jeddah, it should be enjoined on captains of steamers leaving Egyptian ports not to receive on board more than one half of the number of passengers usually admitted.

2nd.—The Conference again invites the attention of the sanitary administration to the selection of localities for quarantines. It would be important to fix these localities as remote as possible from the ordinary ways of communication.

3rd.—Finally, the Conference expresses the desire that, in the above supposed case, the despatch of Egyptian troops will be interrupted.

Professor Bosi, and some other members, said that certain portions of the despatch read by Dr. Salem Bey were not sufficiently clear, and they did not hesitate to attribute the deaths reported at Suez to cholera.

Dr. Fauvel shared this view, and believed that in any case the news received from Egypt did not justify the determination of the Sanitary Intendancy to suppress the quarantine of observation. Dr. Fauvel proposed that the Conference should express the desire that

this quarantine should be re-established and maintained until further orders.

Dr. Maccas also thought that the telegram from the Sanitary Intendancy of Alexandria was not such as to justify the suspension of the measures decreed by the Superior Council of Health in accordance with the wishes of the Conference. The Greek Delegate concluded, like Dr. Fauvel, by wishing that the Conference would once again express the desire for the re-establishment of the quarantine of observation upon arrivals from Egypt, and its maintenance until the arrival of information of a perfectly re-assuring nature.

Count de Lallemand, Stenersen, and Professor Bosi also supported this proposition.

Dr. Bartoletti, on the other hand, thought that to look upon clean bills in the light of foul bills of health would establish a bad precedent, and would be in opposition to all principles. Such severity might be understood if epidemic cholera really existed in Egypt, but there was nothing to prove that it did, considering that the telegram of the 31st May only mentioned one sporadic case, and that the extraordinary mortality at Suez, which dated from the 15th May, was anterior to the return of the pilgrims, and therefore had no connexion whatever with the rumour which had been spread of the reappearance of cholera at Jeddah. Unless they wished to impose a quarantine of 15 days upon Egypt because cholera existed perhaps in the Hedjaz, Dr. Bartoletti was of opinion that they should wait for more precise information. If necessity should arise, the Ottoman administration would not fail to take the necessary measures for the protection of the public health.

Dr. Salem Bey quite concurred in these observations. The Sanitary Intendancy ought not to, and could not, act otherwise than it had done; it was necessary, moreover, to avoid with the greatest care the adoption of premature measures which would needlessly alarm the people.

Dr. Monlau was of opinion that the Conference should not again give expression to its wishes. The Superior Council of Health not having thought proper to defer to that which it had already given utterance to, *viz.*, that arrivals from Egypt should be subjected to quarantine, it would be more dignified if it abstained from a repetition of its wish.

Dr. Fauvel resented the reproach cast at the Superior Council of Health by Dr. Monlau: the Conference had certainly the right of giving expression to its wishes, but it was for the Council of Health to see and judge how far they should be taken into consideration.

Chevalier Pinto de Soveral brought forward the following proposition:—

"The Conference, hoping that the Superior Council of Health will "adopt all the measures it has indicated, cannot refrain from recom- "mending these measures to it again, leaving it to bear the responsibility "of the consequences which may result from their non-adoption."

A great number of members demanding the termination of the discussion, His Excellency the President put to the vote Dr. Fauvel's proposition, which was adopted by a majority of 18 against 2, *viz.*, Drs. Monlau and Salem Bey, M. Segovia and the Austrian, British, and Turkish Delegates desired that it should be placed on record that they had abstained from voting.

M. de Krause declared that he was ready to withdraw his proposition for the time, it being only the complement of that brought forward by Dr. Fauvel, if the Conference deemed that that would be best. In that case he would ask that they should pass at once to the order of the day.

Chevalier Pinto de Soveral insisted that his proposition should first be put to the vote.

The President consulted the Conference, which pronounced by a majority of 18 against 2 in favor of the order of the day, *viz.*, the continuation of the discussion on the mode of composition and the nomination of Committees for the examination of the 3rd group of the programme.

Dr. Salem Bey and Chevalier Pinto de Soveral protested against this vote. The latter maintained his right to demand that his proposition should be put to the vote.

After a discussion between Dr. Fauvel, Dr. Sawas, H. E. Salih Effendi, Dr. Dickson, M. Segovia, M. Kalergi, Professor Van Geuns, Professor Bosi, Dr. Bartoletti, and Dr. Monlau, it was decided that the entire Conference should divide itself into three Committees corresponding to the three sections of the 3rd group of the programme; that lots should successively be drawn for the medical and diplomatic Delegates who would have to comprise part of each of these three Committees, and finally that they (the Committees) would have to give an account of their labors and the results thereof to the Conference immediately on their termination.

To form part of the first Committee the following Delegates were nominated:—MM. Vetsera, Segovia, Keun, Mirza Malkom Khan, and Drs. Monlau, Spadaro, Goodeve, Millingen, Gomez, Mühlig, and Lenz.

For the second:—MM. Count de Noidans, Chevalier Pinto de Soveral, Oluf Stenersen, H. E. Salih Effendi, and Drs. Dickson, Maccas, Salvatori, Sawas, Pelikan, Baron Hübsch, and Bartoletti.

For the third:—MM. Count de Lallemand, Kalergi, Vernoni, de Krause, and Drs. Polak, Sotto, Fauvel, Bosi, Van Geuns, Bykow, and Salem Bey.

Drs. Mühlig and Millingen declared that, not admitting the classification of the 3rd group as adopted, they accepted it only conditionally. Dr. Mühlig thought, moreover, that the Committees should have, like the Committee appointed to examine the 1st and 2nd group of the programme, the power of departing from the strict letter of the programme.

M. Stenersen moved that the Committees should not assemble until after the termination of the discussion of M. Fauvel's report, which ought to be the base of their labors. This motion, which was opposed by various members, gave rise to a discussion in which Drs. Polak, Bykow, Count de Lallemand, Dr. Gomez, M. Stenersen, Dr. Goodeve, and Dr. Monlau, successively took part. The Conference then adjourned to Saturday, the 9th instant, for the commencement of the discussion on Dr. Fauvel's report, it being left to the Committees to decide whether they thought they could or could not enter upon their deliberations before the definitive adoption of that report.

It was also decided that the proposed classification of the questions in the third group, as read by Dr. Fauvel at the eleventh meeting, should be printed for distribution to the members of the Conference.

The meeting concluded at 4-45 P. M.

SALIH,
President of the Sanitary Conference.

DR. NARANZI,
BARON DE COLLONGUE, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 14, OF THE 9TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its fourteenth meeting at noon of the 9th June 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

For Belgium:

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul-General, Charge d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to H. B. M.'s Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of H. M. the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp-General to H. M. the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Charge d' Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia,

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Canstantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi, one of the secretaries, read the minutes of the 12th meeting: they were approved.

Acting on the advice of several Delegates, the Conference decided—

1*st*.—To abridge as much as possible the minutes of the meetings, in order that they might be got ready regularly at the conclusion of each meeting.

2*nd*.—To postpone to the end of each meeting the communication of telegrams and other subjects not set down in the order of the day.

His Excellency the President gave permission to M. Fauvel to proceed with the reading of the general report on which the discussion was opened.

After a conversation between several members, the Conference decided on reading the title of each chapter of the general report. The discussion, if there were observations to be made, would thus bear in detail upon each chapter and each paragraph.

M. Fauvel stopped at the introduction to the general report (1st and half of the 3rd page)—adopted unanimously. He then proceeded to the first group of questions: the 1st chapter (up to the commencement of the 6th page) was adopted unanimously.

M. Fauvel stopped at the 2nd chapter:

Several Delegates asked permission to speak in the following order:—

MM. Lenz, Bykow, Polak, Malkom Khan, Sawas, Van Geuns, Bartoletti, Segovia, Pelikan, and Gomez.

M. Fauvel said he would not speak in support of the general report until after all the speakers had made their observations.

M. Lenz spoke to the same effect:—

His name, he said, and that of his colleague, Dr. Bykow, had been omitted, by a misunderstanding, from amongst the number of those who had voted against the paragraph regarding Persia, which had not been voted upon by himself and his colleague until after the General Committee had taken up the examination of the report of the 1st Sub-Committee. When the general report was being read, they believed that the vote was to be taken only upon the verification of the correctness of the text.

M. Lenz declared that he had never regarded Persia as a doubtful country with regard to the *endemicity* of cholera, because the constant and multiplied relations between that country and Russia would without doubt have revealed the endemic state of cholera in Persia, and moreover the disease would have been transmitted much oftener than it had been to Russia, which, in the space of 43 years, had received cholera from Persia only three times and always simultaneously with the great epidemics which have ravaged the world.

M. Gomez demanded that his signature should be added to the declaration made by M. Lenz.

M. Bykow put forward some considerations on the same subject. He commenced by confirming the observations made by M. Lenz in regard to the vote on the paragraph regarding Persia, and he added that it was unknown that a single choleraic epidemic had originated in any part whatever of Persia. The vicinity of Persia, he said, to the Russian frontier, and the great commercial relations between the two countries, abundantly proved the non-endemicity of cholera in Persia. That country, he thought, had played the same part in regard to cholera as the Hedjaz. In his opinion, the Committee, which had taken into consideration Burckhardt's assertion, exonerating the Hedjaz, should also have taken into consideration the affirmation of several trustworthy travellers who had visited Persia, and who stated in the most formal manner that cholera was not endemic in that country: (Camper, Malcolm, Fraser, Goubinot, Bromchet, Polak).

He (M. Bykow) believed he was authorised to make a distinction between Persia, and the less known countries mentioned in the Report, such as Indo-China, China, &c. He concluded by saying that neither did he believe in the identity of the geographical climate of the south of Persia and that of Bengal, the special climatic conditions of which latter country appeared to him to be intimately connected with the existence in Bengal of the Ganges and its mouths.

M. Polak attacked the text and the conclusion of the 2nd chapter of the General Report, regarding Persia, and in doing so he made use of the following arguments :—

Having made a sojourn of nine years in Persia, he had, he said, studied the country well ; he had acquired all possible information from embassies and consulates and European physicians residing at Tabriz, Recht, Kirman, and Shiraz, and from all this information, these researches, and these studies, he had proved most conclusively that *the endemicity of cholera in Persia was an assertion which could in no way be justified.* Notwithstanding her geographical position, and the constant communication by land and by sea between her and India, which had frequently, and oftener than other countries, communicated cholera to her, the disease, he said, had never been spontaneously generated there, and had never remained there endemically : on the contrary it had, considering the sparseness of the population, exhausted itself quicker in that country than elsewhere.

Thus, said M. Polak, from 1855 to 1860 there was no trace whatever of the disease. In regard to the sea-board of the Persian Gulf, which was most suspected, besides the thousand evidences in favor of the non-endemicity of the disease, it was enough to remember that the disease made no appearance whatever during the English expedition to the Persian Gulf, although the troops came from India.

It appeared that it had been decided to place Persia in the category of doubtful countries with a view to compel the Persian Government to establish a sanitary intendancy, and also to introduce proper regulations in the conveyance of corpses to Kerbellah—to which conveyance the transmission of the disease to Bagdad was attributed. But, without resting upon such a supposition, he (M. Polak) would ask whether there were not other and simpler means for the attainment of that object without doing wrong to Persia by a false assertion. He was the first to admit the necessity of a regular sanitary department in Persia, and he had devoted the best years of his life to that object, and he was able to assure them that H. M. the Shah of Persia himself would willingly accept such an institution. But it should be done by good-will and not effected by threats and intimidation by declaring cholera to be endemic in Persia—for in doing so, they would appear to desire the establishment of a constant quarantine and its maintenance by the influence of Russia and Turkey, which would ruin the somewhat considerable commerce of Persia—as had happened before, and previous to its abolition by the Sublime Porte.

M. Polak declared that, having no interest in flattering the Persian Government, what he had just said was the expression of his profound conviction, and of what he believed to be the pure truth.

In conclusion, he (M. Polak) framed the following proposition :—

" The Conference believes itself to be sufficiently informed to admit that cholera is not endemic in Persia (and in the Soude islands)."

Mirza Malkom Khan refuted, in writing, the 2nd chapter of the 1st group of the General Report, regarding Persia.

Persia, he said, was unjustly classed amongst the least known countries. He thought it was perfectly known, and in support of his belief he alleged the following considerations :—

1*st*.—The great European Powers had fixed legations in Persia for the past sixty years, and during that time upwards of twenty Persian embassies had been sent to Europe, in addition to the diplomatic missions regularly maintained by her in the capitals of Europe.

2*nd*.—Since the beginning of the present century, Persia had been sending students to Europe to be instructed in the literature, science, and art of the West.

3*rd*. - Persia had been a hundred times visited by travellers of repute, and a hundred times explored by all sorts of missions despatched from Europe. By these missions, every thing had been searched, examined, studied, and discovered-- religion, history, manners, ruins, agriculture, &c. Indeed, it had been found possible, thanks to women, to extend these researches even beyond the barriers of the *harems*.

4*th*.—The telegraph placed Europe in communication with the most outlying provinces of Persia, and, in addition, there was the regular and important service of diplomatic couriers.

Thus then, the authors of the General Report were in no way justified in regarding Persia as a suspected country on account of want of knowledge of her.

How could it be asserted, he continued, that so many different authors who had lived in Persia for years could have been ignorant of, or have passed by in silence, such a grave and momentous event as that of the generation and development of cholera in Persia? Would it be said that they were incompetent? Several of them were physicians, and very estimable physicians : It was necessary, to mention but one,—their colleague, Dr. Polak, who had been received by Persia from the Austrian Government. For the sake of brevity, he omitted the names of many others.

Independently of all that, the passage he objected to ought, said Mirza Malkom Khan, to be struck out of the Report in the interest even, and for the honor, of the Conference. A confession of ignorance on its part would compromise it in the eyes of Europe, which was perfectly well acquainted with Persia, better indeed than with many other countries.

Persia, he said in conclusion, had a Government which had always been anxious to take every measure and make every sacrifice which might be recommended to it in the interest of the public health. If, then, the Persian Delegates found themselves under the necessity of protesting against the accusation brought against Persia, it was chiefly because they did not wish that the avowal of such a great want of knowledge should be displayed in the labors of the Conference.

The Conference, on the contrary, ought to be decidedly aware that Asiatic cholera had never been observed in Persia in an endemic condition.

For a more ample demonstration of his views, Mirza Malkom Khan referred them to his honorable colleague, who would furnish them in detail with the proofs by which they were supported.

M. Sawas read a paper, the object of which was also to combat the idea which had placed Persia among the countries which the Conference had been prevented, from want of correct knowledge in regard to them, from formally declaring not to possess cholera in an endemic condition.

The demonstration given by M. Sawas was divided into three heads, *viz.* :—

1*st.*—The question of vicinity in a geographical point of view.

2*nd.*—Historical knowledge touching the existence of cholera in Persia before the year 1821.

3*rd.*—Historical knowledge of the choleraic invasions of Persia, from the year 1821 down to the last epidemic.

M. Sawas commenced by showing that four great deserts separated Persia from India; the distance, he said, was so great that any overland communication between the south of Persia and India was almost impossible. In support of this assertion, M. Sawas quoted Nadir Shah, General Gardane, and others.

M. Sawas remarked that the extreme north-east of Persia alone offered a passage through very vast intermediate countries, but whose populations were very sparse. By this passage alone could Persia be placed in communication by land with India.

M. Sawas then established that the direct communication by sea between Persia and India was subordinate to certain conditions of season. For instance, to proceed direct from Bombay to the Persian Gulf, the voyage could be made during five months of the year only. It might boldly be asserted, said M. Sawas, that the sea communications between Persia and India were only indirect.

M. Sawas then indicated the routes by which cholera had on several occasions invaded the Persian territory, for he did not pretend to deny that Persia had received and transmitted the disease. Down to the year 1821, M. Sawas assured the Conference, cholera was a disease altogether unknown to Persia. In support of this fact he quoted the works of many very respectable and trustworthy travellers, (for instance, Sir John Malcolm, Jukes, and others.) Even an equivalent term for cholera did not exist according to these authors.

In regard to the 2nd head of his argument, M. Sawas believed it necessary to make incidental mention of the medical body in Persia. In that country there were numerous and enlightened foreign physicians, there was a native medical body, there was a school of medicine.

All this tended to produce a very correct knowledge of the sanitary state of Persia, and that knowledge existed. It did not, however, he added, exclude the existence of great *lacunæ*.

M. Sawas proceeded to present a summarised table of the choleraic epidemics which had raged in Persia since 1821.

Persia, said M. Sawas, had been invaded from two different points:—The Persians became acquainted with cholera in Turkey in 1821, in which year the two countries were at war. To this effect, M. Sawas quoted the narration of the epidemic drawn up by Abbas Mirza, whose report was worthy of the greatest confidence, according to Sir John Malcolm himself. Of this same epidemic, which continued till 1823, and which made its first appearance at Bassorah in 1823, Graves also speaks in his 23rd clinical lecture.

Second choleraic invasion of Persia in 1824.—In 1824, said M. Sawas, cholera raged in India with unusual violence. In 1829 it broke out at Oremburg (in Russia), which maintained extensive commercial transactions with Bokhara. From Oremburg it passed to Kiakhta, a town on the frontier of the Russian Empire, and the seat of a great fair. From Kiakhta the disease was communicated to Cabul in 1829 after the fair, and thence it passed progressively to Herat and Meshed, and broke out the following year at Teheran. This epidemic raged in Persia for three years.

From that period, said M. Sawas, cholera completely disappeared from Persia until 1845.

Third choleraic invasion.—In 1845 cholera broke out afresh at Teheran, where the disease remained until 1846. From Persia it passed on to Russia and Turkey, by way of Bagdad. In Persia it was completely extinguished. In 1848 this epidemic came from India, *viâ* Affghanistan, Bokhara, and Samarkhand.

Fourth choleraic invasion.—In 1851 cholera having manifested itself at Bassorah it took two different directions, one towards he east, the other towards the west. It invaded Bagdad. In 1852 the disease crossed the frontier and passed into Persia, whence it invaded Russia by way of Astrakhan.

Fifth epidemic.—Towards the termination of the year 1860, cholera came into the country with the Persian troops returning from Turkistan, and in its rapid march it invaded Turkey.

Such was the history of the known epidemics. In 1865 Persia preserved herself from cholera by closing her chief ports against arrivals from the Arabian coast.

M. Sawas said in conclusion, in regard to the 2nd head of his argument, that, from 1821 to the last epidemic, Persia had been afflicted with cholera only five times. It had often been given to Persia and by her in turn communicated to Turkey and Russia.

The disease, he thought, had most often invaded the Persian territory from the north-east and the north—rarely from the

south, in which were situated the provinces on which the doubts rested.

On this subject M. Sawas put forward other proofs taken from the reports of the English consul at Bushire in the Persian Gulf and from other English authorities. To persist in the doubt after such information and after such proofs as he had just given, said M. Sawas, would be a proof of premeditated severity in regard to Persia, perhaps of an intention to maltreat her. Moreover, Persia showed her ardent desire to enter into the European sanitary union, and therefore such severity would be all the more out of place. Such was not, he thought, the intention of the Conference, which—far from wishing to maltreat and alienate the only purely Asiatic Power which had understood the importance and utility of Western knowledge, and which it was successfully struggling to introduce among her own people and amongst her neighbours—comprised the Delegates of civilised and well-informed Governments, which had in all times manifested a deep sympathy with Persia, and the reviving civilisation of that glorious and formerly celebrated country.

Having regard to all these considerations, M. Sawas, in his own name and on behalf of his colleague Mirza Malkom Khan, proposed the following amendment:—

"That Persia shall be struck out of the category of countries in regard to which it is thought proper to entertain doubts as to the endemicity of cholera."

M. Van Geuns read a paper in which he explained the motives which had induced him to vote against the 2nd chapter (pp. 6 and 7 of the general Report). He made use of the following arguments in explanation of his negative vote:—

The Committee had, in his opinion, established, on unjust principles, the altogether arbitrary distinction of placing countries more or less closely bordering upon India in two categories,—countries in regard to which sufficient information did not exist for the adoption of conclusive opinions, and countries to which cholera had indisputably always come from without. That classification moreover, he thought, was of no utility whatever to the practical object of the labors of the Conference.

In regard to the islands of the Indian archipelago, which had been placed by the Committee in the category of doubtful countries, he hoped to prove that they ought to be placed decisively amongst those countries to which it was incontestable, cholera had always been brought from without.

The neighbourhood of India, said M. Van Geuns, had occasioned the doubt in the first instance. The first thing to be undertaken then was to see, to prove, how far the limits of that neighbourhood extended; quite as much indeed, said he, because the Committee had wished to fix it in a very vague manner, comprising in it almost the whole extent of Asia from the East to the West, as for any other reason.

In the second place, it was unjust, he thought, to class every little or badly known country in the category of doubtful countries. At that rate the Committee would have had to comprise in it many unknown countries which it did not mention, but every body could see to what such a doctrine would lead. Independently of all that, was it indeed true that the Conference was acquainted with the latest facts regarding cholera epidemics in the countries placed beyond doubt by the Committee? The Report itself could reply to that question, for it said that it had not always been possible to follow up the chain of facts. It was useless, therefore, to rest satisfied with the opinion of physicians who did not believe in contagion and in the historians of epidemics. At the same time, he (M. Van Geuns) did not deny that there might be countries out of India where cholera was spontaneously generated. For the time he contented himself with saying that they were not known.

To maintain that a country possessed cholera in an endemic condition, it was necessary, said M. Van Geuns, to be in possession of authentic facts, especially in a practical point of view, and direct proofs. Doubt on that head was not permissible, for they were not authorised to adopt measures simply upon a doubt—most severe measures consisting in the interruption of the relations between these countries, or at any rate in their strict surveillance. For these reasons, he (M. Van Geuns) had been obliged to reject the principle adopted by the Committee.

M. Van Geuns then proceeded to examine whether, even admitting the principle laid down by the Committee, the islands of the Indian archipelago might be assigned a place amongst the countries bordering upon, or in the neighbourhood of, India, with regard to which sufficient data did not exist for the formation of an opinion whether cholera was always introduced into them from without.

In the first place, observed M. Van Geuns, among these neighbouring countries there were some situated in the same continent and others at a greater or less distance, separated by sea. This circumstance was of great weight. For over this vast Indian archipelago was scattered a series of islands, covering 30. in extent, or the twelfth part of the circumference of the globe. This extent was comprised from the westernmost point of Sumatra (95°) to Menado (125°).

From the nearest point of Sumatra to Calcutta and the mouths of the Ganges, the distance was almost equal to that separating Alexandria from Naples. It was true that the peninsula of Malacca was much nearer to it, but it was separated from the Dutch possessions by the straits of Malacca.

M. Van Geuns was willing to refrain from urging the arguments he might draw in his favor from other geographical considerations, being anxious to enter upon the question itself. That question could not be better understood or solved than by an historical review of the different epidemics which had raged in the Dutch colonies of the Indian archipelago. Cholera showed itself there for the first time in 1821, and

then for the first time invaded Java. In 1825 it penetrated as far as the Moluccas. A fact of the greatest importance, which it was necessary to note, was that the islands having most commercial relations with India had been, since the first invasion of cholera, the chief theatre of the epidemics—it was from them that cholera had always commenced its march, which tended to prove the importation. Sometimes this march occupied four years before reaching the most remote islands, the Moluccas. M. Van Geuns referred the Conference to Hirsch's work for information as to what had passed in the Indian archipelago down to 1830. After that time cholera disappeared until 1851, when it showed itself afresh in Sumatra.

According to that author, cholera not only did not maintain itself in the towns, but it disappeared for twenty years.

M. Van Geuns affirmed that after 1851, no other epidemic broke out in the Indian archipelago until 1855. Three years later, *i. e.*, in 1858 and 1859, another invasion of cholera of small importance occurred. Not till 1864 did a serious epidemic show itself which was extinguished, according to received accounts, the following year. So that since 1851 only four epidemics had been noted, although during the intervening years there had been occasional cases of sporadic cholera which might with good reason be looked upon as cases of cholera nostras. The figures were as follow:—In 1853, 151 cases; in 1854, 282 cases; in 1857, 139 cases; in 1862, 8 cases. But during the years 1858 to 1860 and 1861 there were absolutely no cases whatever of cholera in the Dutch colonies. There could, therefore, be no doubt, said M. Van Geuns, in regard to the non-existence of cholera in an endemic condition in those islands.

Following up all this information, M. Van Geuns proceeded to details regarding the invasion and march of the disease in question. He showed that on every occasion cholera had been imported into the islands. These details in respect of the first epidemic were taken from the works of Bleeme, Riehl, Muller, Schilet, &c.

It was also necessary, continued M. Van Geuns, to solve an objection which had been raised in Committee in regard to the parts of the island not under the control of the Dutch Government. The objection would lose all its force if they were to take into consideration the minimum figure of the population free from official control, while that control was exercised, in the most satisfactory manner, on a population of 25,000,000 souls to whom the details mentioned above referred. He (M. Van Geuns) said that what was essential, was to be well acquainted with every thing connected with the islands of Sumatra and Borneo. Those islands, which were so remotely situated that they could not be comprised within the already very wide circle of neighbouring countries, could not be included in the question. Consequently, M. Van Geuns, after having spoken of the extent and geographical climate, population, and hygienic conditions, and the choleraic epidemics of the islands of Borneo and Sumatra, concluded that everything relating to these

matters justified him in rejecting the supposition of an original source of cholera in those Islands. The importation of cholera into them had always been shown.

To develop this conclusion better, M. Van Geuns added:—A Government which had so actively interested itself in the pursuit of scientific researches in its colonies could not have lost sight of their sanitary condition, so that it could not be held that the question was impossible of solution for want of sufficient data. On the contrary scientific and medical data of every kind might be extracted from the works written by medical men of Java, amongst whom figured the well known names, for instance, of Blume-Junghu, Triedmann, Haskarl, Bleeker, Bosch, and many others. Not one of them spoke of endemic cholera in those countries. Could they have omitted it designedly? No, certainly, for they were all agreed in saying that cholera had always been imported from without. It was impossible therefore, said M. Van Geuns in conclusion, to remain in doubt—and he proposed the two following questions, to which he invited the best attention of the Conference:—

1*st*.—Is it necessary to maintain the category of doubtful countries?

2*nd*.—Would it be just to include the islands of the Indian archipelago amongst these doubtful countries?

M. Bartoletti thought that the true meaning of the article regarding Persia had not been properly appreciated. But it lay with the reporter, he said, to explain it. Having voted for this article, M. Bartoletti thought it was right that he should acquaint them with his motive for doing so. He was not going to utter a discourse; he would limit himself to putting forward some notes extracted from the archives of the intendancy, thanks to which the information given by M. Sawas might be completed.

The notes, which he made it a duty to communicate to the assembly, comprised the facts relating to the epidemics which had succeeded each other in Persia from 1851 to 1861.

In 1851 the French consul at Bassorah announced that cholera had broken out in that town. By the 2nd of July the mortality had increased to 40 and 50 daily. The first who fell a victim to the disease was the director of the quarantine. On the 16th July the British consul wrote that cholera had shown itself, with great intensity, at Mohammerah. On the 24th it appeared at Samarat and Sinafieh, and on the 29th at Imam Ali, where, during the height of the epidemic, the daily mortality reached 20. On the 12th August the disease showed itself at Hilla. From the 12th August to the 7th September the number of deaths among the population amount to 1,080, and among the military to 48, the population amounting to 20,000. On the 11th September the epidemic declared itself at Bagdad, where, down to the 18th November, it carried off 1,587 victims from amidst a population of 600,000. On the 18th September the cholera showed itself at Imam

Mousa, an hour's journey from Bagdad; in one month there 433 deaths in a population ordinarily very limited, but which at that time comprised 12,000 Persian pilgrims among whom the epidemic raged. The disease took two routes—the one from Bassorah towards the west, reaching Souh-el-Chuk, Samavat, Sinafieh, Imam Ali, and Hilla; the other, towards the east, by Mohammerah, attacking many nomadic tribes, and Suleimanieh and Revandouz successively. According to Dr. Belleli, a sanitary physician, the Persian pilgrims contributed to spread and maintain the disease, owing to their overcrowding and their great numbers in the towns and villages at which they were in the habit of stopping. (*See* the Reports of M M. Padouan and Belleli.)

In the first half of the year 1852 some sporadic cases were observed at Bagdad and other places in Mesopotamia,—the disease having previously raged in many districts and villages of Persia. On the 17th November the disease, according to a despatch from the British minister at Teheran, was at Tauris.

In 1853 the inspector of health at Bagdad reported, under date the 1st June, that cholera was raging at Teheran. According to the same authority, the disease had, on the 15th June, reached Astrabad on the Caspian Sea, and Bushire and Shiraz by the 29th of the same month. The inspector said that apprehensions existed of an invasion of the epidemic by the coasts of the Persian Gulf, as had occurred at Bassorah in 1851. By the 13th June cholera had already reached Hamadan and Kermanshah, on account of which it was thought proper to subject arrivals from Persia to a quarantine of observation, and to prohibit the entrance of corpses into Ottoman territory. On the 19th October the inspector announced that cholera had reached Bassorah, imported *viâ* Mohammerah. The troops of the Shah, ravaged by cholera, scattered themselves and disseminated the disease throughout Persia. On the 18th November it passed from Persia, *viâ* Bassorah, to Bagdad.

In 1855 the inspector announced, on the 17th October, that cholera had shown itself at Teheran. This information was confirmed by the British consulate. Later it reached Tabreez. In the month of October, 13,493 Persian pilgrims underwent quarantine at Khaneguin, and on the 13th November the disease showed itself at Hamadan. On the 28th November the Mecca caravan arrived at Imam Ali in good health, although it had been attacked by cholera *en route*.

In 1856 cholera ravaged Recht, the capital of the province of Ghilan, near the Caspian sea. On the 6th October it had reached Teheran (14 to 15 victims daily). On the 17th September it showed itself at Ispahan, Hamadan, and Kermanshah. On the 10th October, 3,600 pilgrims were in quarantine at Kanizitieh, and amongst them there were from eight to ten cases of cholera daily. They concealed their corpses, which they cast into the desert and in the Diala. They also concealed their sick among their baggage on the appearance of the health agents. They broke through the quarantine, many

hundreds flying through the Diala, who were brought back by the Bashibazouks. Cholera showed itself at Bagdad, it ravaged Kermanshah. The quarantine was broken through forcibly; 5,000 pilgrims, decimated by cholera, threw themselves upon Bagdad, followed by other caravans stricken with the scourge. They threatened to enter the town, and it was found necessary to repulse them *vi et armis*. The disease carried off 58 victims at Bagdad in the space of a month, and at Kerbelah there were from 25 to 30 deaths daily. The entire course of the Euphrates was infected; at Bassorah there were from 30 to 35 cases of cholera every day.

In 1857 cholera showed itself in the north-east of Persia and spread to Shiraz. The report (No. 20) said that cholera was imported every year by the caravan of pilgrims from Persia. A fresh invasion was apprehended at Bagdad, and the epidemic did, in fact, break out there on the 16th October. On the 22nd it was at Kerbelah and Imam Ali. There were 1,000 deaths at Kerbelah and 394 at Imam Ali; 91 at Bagdad.

In 1858 the disease existed at Teheran and at Koum, on the Teheran road: at Mohammerah it carried off 38 victims daily. On the 13th October the disease spread to Bassorah, where in a few days it carried off 30 victims.

In 1860 cholera invaded Persia in the beginning of November, and, on the 19th December it raged with violence at Kermanshah. On the 6th December it arrived at Bagdad, where 42 deaths took place between that date and the 19th.

In 1861 cholera raged at Kermanshah, and appeared at Teheran in the month of January. On the 31st July 80 cases daily were reported at Hamadan. On the 28th August it appeared at Kermanshah, where according to what is asserted (perhaps without any foundation for the assertion,) there were 300 deaths a day out of a population of 25,000 souls then greatly reduced by emigration. On the 19th September a mortality of 250 persons in 19 days was reported at Mandeli, twenty-five hours' journey from Bagdad; then at Bakouba, 9 hours' distance from Bagdad (10 cases a day in a population of 4,000 souls.) The report of the 19th October of the same year announced that cholera existed in Persia and at Bagdad, at Imam Ali and Kerbelah. On the 13th December it showed itself at Iman-Ali, where it lasted for a month, 30 persons dying daily during the height of the epidemic. At Kerbelah there were 427 deaths during the month of December.

M. Bartoletti said, in conclusion, that wishing to be positive, he had confined himself to quoting facts and figures without any sort of commentary, and without pretending to demonstrate that cholera was endemic in Persia. From 1861 to 1865, he added, there were no further epidemics in Persia.

M. Sawas thanked M. Bartoletti, and said that the information he had been good enough to afford was of great importance to what

he (M. Sawas) maintained, *viz.*, that cholera had always been imported into Persia. But a complete proof of his principle, said M. Sawas, was furnished by the facts communicated by M. Bartoletti. That principle was this :—It was beyond doubt that Persia very often communicated cholera to Turkey, and sometimes Turkey transmitted it to Persia. It was important to note, said M. Sawas, that the Persian Gulf must not be confounded with Persia, for that would lead to error on the part of M. Bartoletti, whose communication bore especially on the epidemics propagated by way of the Persian Gulf rather than by Persia herself.

M. Bartoletti replied that he had not so confused matters. His communication very exactly reported the facts appertaining to each locality ; and the most distinctly proven fact drawn from them was that the pilgrimage which lasts for almost the entire year at Bagdad, is the chief cause, by reason of the great movement it maintains between Persia and Bagdad, of the dissemination of cholera.

M. Segovia wished to draw attention to a fact resulting from the discussion. In the General Committee they had been made to believe that Persia was an unknown country, that data in regard to it were not forthcoming, nor documents, nor works from which her sanitary condition might be known. And, therefore, the General Committee, which Mirza Malkom Khan had just handled with such severity, had decided on classing Persia among the doubtful countries. But the question had now undergone a complete change : thanks to the amount of information which had just been communicated to the Conference, it was almost a matter of demonstration that Persia was one of the best known countries.

In the interest of the discussion, as well as with a view to shorten it, M. Segovia put forward four propositions, which he believed to be of capital importance. In doing so, however, he said, he did not wish to prejudice the explanations which the reporter-general had been good enough to afford.

These four propositions were :—

1*st.*—The geographical position of Persia with regard to India and her distance were not such as they had been represented to be by M. Sawas.

2*nd.*—The relations of the one country with the other were not maintained by the routes and in the manner explained by M. Sawas.

3*rd.*—It was not certain that there existed, or could exist, with regard to the sanitary condition of Persia such precise information and such complete and profound knowledge as was pretended by the Persian Delegates.

4*th.*—The want of positive data on this head being proven, and the absence of medical reports being demonstrated, as well as the existence of other analogous or contrary reasons, it was a matter of necessity to place Persia among the countries where the existence of endemic cholera was reputed to be possible.

If M. Fauvel or somebody else, said M. Segovia in conclusion, did not afford the most logical demonstrations of the four points above-mentioned, justice and equity would force them to comply with the demand of six or seven Delegates, *viz.*, to strike out Persia from the list of countries under suspicion, so to say, of choleraic endemicity.

M. Pelikan observed that the information afforded by M. Sawas was calculated to throw doubt upon what, up to that moment, had been believed. In his capacity as eporter to the Committee appointed to consider the 3rd group, M. Pelikan thought he was bound to say that the reasons which had obliged the members of the Committee to consider the information available in regard to cholera in Persia and the islands of the Indian archipelago to be of the same nature as that which existed with reference to choleraic epidemics in the Hedjaz, had ceased to be of any importance, considering the fresh facts which had now been communicated to them, and which had then been unknown. M. Pelikan was of opinion that, if the first formed convictions of the Conference were shaken, they must of necessity strike Persia and the islands of the Indian archipelago from the category of suspected countries.

As for M. Bartoletti's communication, it did not prove, in M. Pelikan's opinion, the existence of endemic cholera in Persia. At the most, it would prove the persistence of the disease in that country, but such persistence had been of much greater duration in Russia. And, moreover, M. Bartoletti's information stopped at the year 1861. But to prove the endemicity of cholera in a country in the neighbourhood of Turkey, the Conference, he thought, should place itself in possession of more recent data. The matter was of sufficient importance to deserve the fullest and deepest consideration.

M. Gomez begged the honorable Conference to accept his statement also in regard to the second article of the general Report. He had voted for it, he said, though he had abstained in other previous divisions of the Committee from classing Persia, the islands of the Indian archipelago, and the Arabian coast, as doubtful countries in respect of the endemicity of cholera.

M. de Krause observed to M. Sawas that the doubts he had expressed about the intentions of the Conference with regard to Persia could not but be rejected by the Conference, for nobody had ever entertained the notion of injuring or wounding Persia; and such an idea would be cherished by the Conference, which observed the strictest equity to all nations, less than by anybody.

M. Sawas replied that he had never entertained a doubt of that. It was so true that, if M. de Krause would attentively consider what he had said on the subject, he would find that he had only given expression to the same thought and confessed the same sympathies as the Conference for Persia.

Several other members having inscribed their names to speak, the rest of the discussion was postponed, in consideration of the late hour, to the next meeting.

H. E. the President asked if there were any communications to make.

Count de Lallemand said he had one, and he accordingly read the following telegram :—

(Telegram.)

TO HIS EXCELLENCY THE FRENCH AMBASSADOR,

at Constantinople.

Alexandria, June 6, 4-13 P. M.

"Letter from Jeddah, dated 26th May, announces some cases of "cholera. The caravan of pilgrims must, it is said, have been seriously "ly attacked towards Medina. Arrivals from Jeddah subjected to "quarantine at Suez, though no cases occurred either in the voyage "or in lazaretto. Some sporadic cases reported at Suez even and at "Alexandria. No epidemic.

"(Signed) M. OUTREY."

M. Bartoletti would bring to their notice that, from the message just communicated to the Conference by Count de Lallemand, it would appear that the grave fact of 106 deaths at Jeddah communicated at the last meeting was not confirmed. In the message now communicated only a few cases were mentioned.

M. Salem Bey made the same observation, and then read a very reassuring message which had been received from Alexandria that morning.

In that message it was said that the sanitary condition of Egypt was good. Some cases of virulent fever, the symptoms of which were given, had occurred at Suez, and some cases of cholera at Jeddah, arrivals from which place were sent into quarantine at Suez. From the 1st to the 22nd May the mortality at Suez had amounted to a total of 32. Anyway, it was said, the case which had given the alarm might at most be considered as a case of sporadic cholera.

Salem Bey added that he had himself very carefully inspected the Egyptian troops already in the capital, and he was assured that their sanitary condition was very satisfactory, for, with the exception of some cases of dysentery, no disease existed amongst them.

M. Bosi said that the news given by Count de Lallemand were of a nature to cause the Conference to persist in the resolution it had adopted at the last meeting, *viz.*, to subject arrivals from Egypt to a quarantine of observation, for in his opinion, the fact was confirmed that sporadic cholera existed at Suez and Alexandria.

The meeting broke up at 5-30 P. M.

Order of th eday for the next meeting:

Continuation of the discussion of the general report.

The following members inscribed their names to speak:—

MM. Sawas, Malkom Khan, Mühlig, Dickson, Goodeve Monlau, Fauvel.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE, DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 15, OF THE 11TH JUNE 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its fifteenth meeting on the 11th June 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain;

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to his Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to his Legation.

Dr. Baron Hübsch.

For Turkey :

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt :)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

The minutes of the 13th meeting were read by Baron de Collongue and adopted with some modifications.

Dr. Naranzi then read the minutes of the 14th meeting. As these minutes reproduced the entire text of each discourse read at that meeting, some members said that they were not in accordance with the decision of the Conference, according to which the minutes should record only a brief analysis of what was said at each meeting. A conversation ensued upon this head, after which the reading of the minutes of the 14th meeting was postponed to the next meeting, the Secretary being desired to modify them meanwhile.

The Committees appointed at the meeting of the 9th June acquainted the Conference, through their respective Presidents, with the selection of officers they had made.

1*st Committee*—President, M. Segovia; Secretary, Dr. Lenz; Reporter, Dr. Monlau.

2*nd Committee*—President, His Excellency Salih Effendi; Vice-President, M. Oluf Stenersen; Secretaries, Drs. Baron Hübsch and Dickson; Reporter, Dr. Bartoletti.

3*rd Committee*—President, Count de Lallemand; Secretary, M. de Krause; Reporter, Dr. Fauvel.

The order of the day being the continuation of the discussion on the 2nd chapter of Dr. Fauvel's report, Mirza Malkom Khan proceeded to reply to Dr. Bartoletti. He said he did not deny the permanent existence, so to speak, of cholera on the Turco-Persian frontiers, nor the frequent invasions of Bagdad by it, but he did deny that it had been imported from Persia and by Persian pilgrims. His idea was that the disease was brought to Bassorah and Bagdad by the large number of Indian pilgrims, Mahomedan sheahs, who crowded every year into Kerbelah, more especially since the annexation of Oudh and the last great insurrection. So far from Persia being the introducer of

cholera into Turkey, he maintained that it was, on the contrary, most frequently imported to her by the latter country. The town of Bassorah, which was notoriously unhealthy, and which had always been the first stage in the progress of cholera, stood right in the passage of the Indian pilgrims coming up the Persian Gulf. Now the Persian pilgrims proceeded *viâ* Kermanshah and not by Bassorah. The pilgrimage to Kerbelah being in no way obligatory, and, moreover, not having to be accomplished at a fixed time of the year, like that to Mecca, Mirza Malkom Khan would ask whether it could be asserted that the Persian pilgrim caravans set out on their journey carrying cholera with them. These caravans always started free of the disease, and not till they joined the Indian pilgrims did cholera ever show itself amongst them. The epidemics which had been seen to recur so frequently in certain provinces of Persia were only the sequel to the epidemics which, after having first made their appearance at Bassorah in Ottoman territory, maintained themselves, for a longer or shorter period, on the frontiers of both countries.

Dr. Dickson said that though Persia had been included in the list of doubtful countries, it was not meant to be asserted that cholera was endemic in that country. Nevertheless, considering the impossibility of being exactly informed in regard to her sanitary condition, she could not be placed on the same footing as Europe.

Dr. Goodeve was not sure whether the frequent epidemics which had ravaged Persia came from India or the Persian Gulf, but he believed that Mirza Malkom Khan had exaggerated the influence of the Indian pilgrims. It was only in the absence of information that he (Dr. Goodeve) had voted, and even then under reserve, that Persia should be declared suspected.

Dr. Monlau was of opinion that the Conference could not only, considering the information furnished by Drs. Sawas and Van Geuns, strike out Persia and the islands of the Indian archipelago from the list of suspected countries, but that it could even advantageously suppress the distinction which the Committee had thought proper to establish among extra-Indian countries in the matter of endemicity. Such a distinction was of no use, unless it was made the starting point for a system of measures to be adopted in regard to the countries so declared to be suspected: and as the consideration of these measures would be taken up when the Conference had reached their proper place in the 3rd group of the programme, he (Dr. Monlau) thought that the distinction might, for the present, be done away with without in any way affecting the substance of the question. It would be sufficient, in that case, to substitute for the conclusion of chapter II. the first sentence of the same chapter, ending thus: "No facts have hitherto reached us to show that Asiatic cholera has ever had its point of departure elsewhere than in India, and it is probable that it does not exist endemically in any other country and capable of giving rise to invading epidemics."

Dr. Mühlig said that, though he did not believe that cholera was epidemic in Persia and the islands of the Indian archipelago, yet that

sufficient data did not exist in regard to its manifestations in the vast extent of those countries to admit of the possibility of affirming the fact positively. Cholera, as had been seen, had raged in Persia almost constantly from 1851 to 1862; it might have been, and it was probable that it had been, imported from India; but could it be maintained that it had not permanently fixed itself in Persia and become acclimatised there in consequence of repeated importations? M. Sawas had said that cholera had only twice been communicated to Europe by Persia, and then only after two great epidemics originating incontestably in India, but was not cholera endemic in India, without, however, being always invested with an invading character? Had not Persia, moreover, been seen to communicate cholera almost every year to Turkey in Asia? Dr. Sawas had also, in order to prove the non-endemicity of cholera in Persia, brought forward the great distance between that country and India and the difficulty of the communications, but could not that argument be turned to use against himself? How could he explain the almost constant presence of cholera in Persia, if its importation from India was so difficult? Dr. Mühlig was of opinion that, from the impossibility of giving a positive and definite reply to all these questions, the Committee could come to no other conclusion than that which it had adopted. Whether cholera was or was not endemic in Persia, he would ask what, in a practical point of view, could be the reason for which the Persian delegates had attacked the conclusion arrived at by the Committee? Was it in the hope of preventing the adoption of special precautionary measures on the Turco-Persian and Russo-Persian marches? Persia, which as yet had no sort of sanitary organisation, could not, for a long time to come, offer guarantees, in respect to this point, sufficient to justify such a pretension.

Dr. Bartoletti disputed the correctness of Mirza Malkom Khan's assertion that the majority of the pilgrims to Kerbelah consisted of natives of India. The great mass of the pilgrims entered the Turkish territory by Khaneguin, Mendeli, Suleimanieh, &c. Now, it could not be pretended that these various routes to the interior of Persia were those which could be taken by Indian pilgrims coming by the Persian Gulf. Dr. Bartoletti put forward a statement showing that, from the 1st December 1849 to the 1st December 1850, there passed through the single station of Khaneguin 52,053 pilgrims, with 64,138 beasts of burden, 4,504 muleteers, and 2,837 loads of corpses, which, giving two or three corpses to a load, would amount to about 8,000 corpses. Perhaps there were some natives of India among these pilgrims, but it was not so stated.

Mirza Malkom Khan, in reply to Dr. Bartoletti, said that a great number of Indian pilgrims annually went on the pilgrimage to Kerbelah. He had had occasion to assure himself of the fact with his own eyes.

A conversation ensued, after some observations made by Drs. Dickson, Maccas, and Goodeve, upon the question whether the Hedjaz, to which a chapter had been especially devoted, ought not also to be mentioned in either the one or the other of the categories in the second chapter: or, at any rate, whether a note should not be added to the chapter,

explaining that the question in regard to the Hedjaz had been reserved. The Conference, after having heard M. Fauvel, decided, by 16 against 3, that no change should be made on this head in the chapter under discussion.

Dr. Bykow did not agree with Dr. Mühlig in thinking that the Persian Delegates had asked that their country should be expunged from the list of suspected countries, because they wished to avert the measures which might be adopted in regard to her. These measures were necessary whether the disease, as it existed in Persia, was endemic or imported from India. Persia, moreover, had declared her readiness to join in those measures. It could not be asserted that cholera was endemic in Persia, but Dr. Mühlig had admitted at the same time that it was impossible to come to a definite conclusion on the point: it was this doubt which it was sought to dispel.

Dr. Fauvel asked permission to speak, not to recommence the discussion of a question which had long been debated in Committee, and of which everybody had by that time heard quite enough, but merely with the object of bringing forward some additional facts, and clearly defining the meaning of the report. After finishing with the question of the endemicity of cholera in India, the Committee had to see whether it existed or not elsewhere out of India in endemic foci. In regard to certain countries, those, for instance, situated in Europe, the Committee had no hesitation in deciding in the negative: in respect to others a decisive opinion could not be pronounced owing to the absence of information sufficient to establish certainty. These were the countries—countries most closely neighbouring upon India, and Persia among the number—which it had been found necessary to declare under suspicion. Persia, on account of her geographical position, was of the greatest importance in the point of view of the propagation of cholera. She was one of the chief links in the chain of communication between India and Europe, and next to India, the country in which cholera had showed itself most frequently, and in which it might be said the disease was permanent. Who could assert indeed that cholera was not endemic, at least in certain parts of Persia? It had been said, in order to prove the non-endemicity that, within a given time, Persia had communicated the disease to Russia not more than four times: but had she not been seen to communicate it eight times to Turkey in eleven years? The Committee had not dreamt of lessening the consideration enjoyed by Persia: commercial interests at most could be engaged in the question. Replying to Mirza Malkom Khan, who had pretended that Persia had received the disease from Turkey through Bassora, because that town was situated on the Persian Gulf route from India to Persia, Dr. Fauvel pointed out, in refutation of the assertion, the route followed by the epidemics from 1851, when a sanitary department was first organized at Bagdad, to 1861, both years inclusive. It appeared from the facts given by Dr. Fauvel that during that period cholera had been imported into Mesopotamia nine times: in 1851, 1852, 1853, 1855, 1856, 1857, 1858 1860, and 1861; that on eight occasions, *viz.*, in 1852, 1853, 1855, 1856, 1857, 1858, 1860, and 1861

the invasion of Mesopotamia had been preceded by the existence of cholera in Persia; that it was true that on three occasions it had not been found possible to define the route followed by the disease, but that it had been sufficiently proved that the other epidemics had come from Persia, twice, in 1853, and 1858, *vid* Mohammerah and the Tigris, and three times, in 1856, 1857, and 1860, by the land frontier. Dr. Fauvel proceeded to remark that to the precise and positive facts furnished by the Ottoman Administration, the Persian delegates had been able to oppose only German authors, necessarily not so well informed. Dr. Sawas had also quoted Gardane, Jobert, and Chardin; but cholera did not exist in Persia when those travellers visited the country, and moreover, could ordinary travellers decide such a question as that of the endemicity of a disease? Was it not necessary to remember that one of these writers, General Gardane, had looked at the country only in a military point of view? Dr. Fauvel said he did not believe in the endemicity of cholera in Persia, but he would ask what, after all, would be gained by taking Persia off the list of suspected countries? If Persia did not retain cholera endemically, did she not almost always possess it epidemically? Now, was not an invading epidemic more to be dreaded than a non-invading endemic disease? The fact had been quoted that cholera had lasted at St. Petersburg for ten years in succession; but this pseudo-endemic disease was not invading. Could as much be said of the Persian cholera? Dr. Fauvel concluded by repeating that to declare Persia under suspicion was certainly the least they could do, unless indeed, which was inadmissible, they were to place her on the same footing as Europe.

Going on to reply to M. Van-Geuns, who had also desired that the islands of the Indian archipelago should be struck off the list of suspected countries, Dr. Fauvel said he left it to the Conference to estimate the fresh facts furnished by the Dutch delegate at their proper value. Was it possible, he would ask, nevertheless, to decide with complete certainty in regard to countries so vast and so little known, countries which, two hundred years ago, were spoken of by Bonsius as being then subject to cholera?

Dr. Sawas proceeded to speak after Dr. Fauvel with a view to refute the arguments advanced by the opposers of the amendment introduced by him in concert with his honorable colleague, Mirza *Malkom* Khan. Dr. Sawas repeated that, without pretending that Persia should be placed on the same footing with European countries, he would not admit that she should be treated as a wild and unknown country. If as yet she possessed no organised sanitary department, was she not occupied in setting one up, and did she not, moreover, possess a body of medical men including several European physicians? Could not a separate place be reserved for Persia, as had been done for the Hedjaz? Everything that had been said of that province in regard to cholera applied equally as well to Persia. Could it not be said even that for thirty years the Hedjaz had been the theatre of epidemics of almost annual ecurrence, while in Persia there had not been more than five epidemics

in the space of 44 years? Could it not be said that cholera existed at that very moment in the Hedjaz, while in Persia there had been no trace of it since the end of 1861, an incontestable proof that it was not endemic in that country. The Persian delegates had been accused of wishing to avert from their country the precautionary measures of which she might be made the object; but he did not know why they should be accused of entertaining hidden intentions when they had in view merely the care and protection of the dignity and interests of her commerce. In reply to Dr. Mühlig and Dr. Fauvel, who had also employed the same argument, *viz.*, that if the distance between India and Persia was so great that it could not be traversed by cholera, it resulted that the disease was endemic in the latter country, Dr. Sawas explained that he had wished to demonstrate that the southern provinces of Persia, which were precisely those which were specially pointed to as being under suspicion, could not communicate with India by land; that in that direction there were immense deserts spreading out between the two countries; and that, in coming from India, Persia was entered by the North by Meshed and Yezd. If he had quoted Gardane, it was because his itinerary was precisely the same as that followed by cholera. It had been urged that the disease might have acclimatised itself in Persia, but who had proved it? It had been said also that cholera had existed for ten years in succession in St. Petersburg, but that these pseudo-endemics possessed the distinctive characteristic of not being invading, and that that was not the case in Persia. Had it then been forgotten that Persia had not given the disease to Russia more than four times, and that, on the Turkish side, the disease, when transmitted from Persia, had never passed Bagdad? In regard to the information given by M. Fauvel about the march of cholera from 1851 to 1861, Dr. Sawas partly disputed its correctness, and notably in a geographical point of view, and he advanced other contrary facts in opposition, taken from the very minutes of the Superior Council of Health. One of these minutes stated, for instance, that in 1851 cholera had entered Persia from Turkey, where it had broken out at Bassora. It was the same in 1852; and in regard to three of the epidemics quoted, the Turkish sanitary physicians had admitted their inability to follow the disease through its course. Nor did he (Dr. Sawas) believe it was possible that the Turkish sanitary authorities at Bagdad could have precise information of what was passing in the interior of Persia. One of the minutes of the Superior Council of Health showed even that for a numbers of years Bassora did not possess a sanitary physician. It could not be denied at the same time that Persia had sometimes communicated cholera to Turkey; but it was positive that on other occasions it had passed into Persia from Turkey; it was a reciprocal gift, alternately exchanged between the two countries. Dr. Fauvel had expressed his surprise at seeing him (Dr. Sawas) quote from works which were, no doubt, old; but was it not necessary to prove that cholera was unknown in Persia as well as in the Hedjaz previous to 1821? Lastly, Dr. Sawas asked that what had been done for the Hedjaz should be done for Persia, *viz.*, that the question should be considered separately and without

confounding the country with wild and unknown countries among which she now found herself classed in the report of the Committee. M. Sawas insisted that they should immediately divide upon his amendment.

Mirza Malkom Khan asked to be allowed to add a few words. It had been said that there was no sanitary department in Persia, but was it then absolutely necessary to possess an organised sanitary department to become acquainted with the march of epidemics? Cholera, leaving India, invaded Persia, by the north, when it proceeded by land in the direction of the Turko-Persian frontier, to which it was also brought from India; but by sea it could not always be known exactly if it first attacked Turkish or Persian territory.

M. Stenersen observed that the tenor of the discussion showed that nobody believed that cholera was endemic in Persia, while the report was so drawn up as to lead father to the contrary supposition. There would be so many reasons the more for the modification of the report and the devotion to Persia of a special chapter, inasmuch as the frequent epidemics in that country were a source of serious danger to Europe.

Dr. Fauvel thought he was bound to express his praise of the good organisation of the Turkish sanitary department on the Persian side. Not only was there an inspector at Bagdad, but there were posts of observation on all the roads.

The numerous documents produced by Dr. Bartoletti showed that the department was well worked.

The President then put the proposition brought forward by Dr. Monlau to the vote. The proposition was thus conceived:—

"No fact whatever has hitherto demonstrated that Asiatic cholera has ever had its starting point elsewhere than in India." It was rejected by 16 to 12.

The amendment of the Persian Delegates, *viz.*, the exclusion of Persia from the list of suspected countries, was also put to the vote and adopted by a majority of 13 against 12. Two members declined to vote.

It was next decided (by an unanimous vote of 18) that the Persian question should be treated of in a special chapter. Dr. Fauvel was appointed to draw up this additional paragraph.

Drs. Bartoletti and Salem Bey communicated satisfactory information in regard to the sanitary condition of the Egyptian troops then in Constantinople, and also in respect of the state of the public health in Egypt.

The meeting broke up at 5-15 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

Dated 7th September, 1866.

From—E. C. EGERTON, ESQ.,

To—H. MERIVALE ESQ.

No. 31.

It is requested that the report may be returned to this office for transmission to the Colonial Office.

I am directed by Lord Stanley to transmit to you, to be laid before Lord Cranborne, a copy of a despatch which has been received from the British Cholera Commissioners at Constantinople, reporting the proceedings of the Commission.

No. 31, dated 8th August, 1866.

From—MESSRS. E. GOODEVE, AND E. D. DICKSON,

To—LORD STANLEY.

In continuation of our despatch No. 30, we have the honor to inform your Lordship that the Conference completed the discussion of the Report of the Committee of the 1st Section of the 3rd group of the programme at its meeting of the 25th instant. It was adopted with two or three slight modifications, which will appear in the protocols. The only modification of importance consists in the addition to the Chapter on Naval Hygiene of a series of recommendations having special reference to cholera, instead of letting it remain with the recommendation that each Government should cause a manual for the use of ship Captains to be written, embodying the requisite information. The Committee accepted the task and presented the "note additionals" which was adopted by the Conference with the recommendation of the fitting up in steamers of an apparatus for disinfecting in connection with the Engine.

Three Copies of the "Note additionelle" are forwarded to your Lordship herewith.

On the 23rd Count Lallemand gave notice that at the next meeting he would bring forward the consideration of the question of the Tariff for the support of the Ottoman Lazaretto and Sanitary Establishments, which had stood over since the meeting of the 31st of May, to enable the Delegates to consult their respective Governments.

The matter was brought forward on the 25th, and after the Delegates had declared their competence or otherwise to entertain

the question, Count Lallemand proposed the election of a Committee to report upon the subject.

The votes stood thus :—

For :		*Abstained :*	
Belgium	1	Austria	2
France	2	Spain	2
Papal States	1	Great Britain	2
Persia	2	Greece	1
Portugal	1	Holland	2
Prussia	2	Italy	2
Sweden	2	Russia	2
Turkey	2		
	13		13

all the States having large commercial transactions with the Turkish Empire, France and Sweden excepted, having declined to enter into the question.

The following Delegates were chosen members of the Committee :—

Count Lallemand ...	France.
Dr. Spadaro ...	Papal States.
Dr. Sawas ...	Persia.
Chevalier de Soveral	Portugal.
Baron Teesta ...	Prussia.
M. Stenersen ...	Sweden.
Dr. Bartoletti ...	Turkey.

On the 25th Count Lallemand presented the report of the Committee of the 3rd Section of the 3rd "group." It contains many provisions relating to India, and especially to the Indian traffic by the Red Sea, and to the Indian pilgrimages to the Hedjaz.

We regret that, owing to a deficiency of copies of the report, we are not able to forward more than one copy to your Lordship by this Mail.

The discussion of the report began yesterday and proceeded to the end of the 18th page.

We have shewn the document to Lord Lyons and shall be guided by his views on the important points relating to British interests, which will immediately come under consideration.

P. S.—We enclose protocols Nos. 16 and 17.

INTERNATIONAL SANITARY CONFERENCE. ANNEXURE TO THE MINUTES OF THE 28TH MEETING.

Additional Note.

To the text of Chapter II. (Naval Hygiene) of the report on the hygienic measures to be adopted with a view to preservation against Asiatic Cholera.

The Committee on hygienic measures, having indicated, in the chapter on naval hygiene, the chief points to which it would be desirable to call the attention of Governments, expressed a wish that every country should draw up a *Manual* for the use of the mercantile marine based on those chief points. But as the Conference thought it would be useful to lay down the bases of such a *Manual* more clearly, the Committee has undertaken the task, and in this additional note to the chapter on naval hygiene, indicates the considerations which ought to be generally adopted as the bases of the measures to be taken during the prevalence of cholera, and which might be inserted in the Manual for the mercantile marine, without, however, entering upon details which cannot be included in rules of a general nature.

The Committee has specially in view ships devoted to the transport of great assemblages of men—emigrants, for instance—as being most likely to spread the epidemic; the measures indicated for these ships will, *mutatis mutandis*, apply with equal facility to all other vessels.

We adopt the same system in this review as in the Report, dividing the proposed measures into hygienic measures to be adopted on the departure of a vessel and hygienic measures for the voyage; but we make no mention of hygienic measures on arrival, for, in regard to a ship entering a port infected by cholera, these latter depend on the department of quarantine, and will, in consequence, be dealt with by another Committee. We shall add, however, some considerations on

SHIPS ANCHORED IN A CONTAMINATED PORT.—We shall not repeat here the maxims of general hygienic touching measures for individual preservation, nor the general rules of naval hygiene concerning the neatness and proper order of a ship, its ventilation, &c., but we shall simply indicate some points which ought to be taken into consideration in a contaminated port.

In this case, we recommend as preservative measures:—

1. *Regarding anchorage.*—To avoid anchoring in proximity to a sewer discharging its contents into the port; to anchor the ship not close in-shore, but, on the contrary, as far from it as possible; and lastly, to avoid anchoring several ships too close to each other.

2. *To clean the hold most carefully*, and empty out the water it contains daily, after previous disinfection; the same measures of disinfection ought to be adopted in regard to the latrines on board during the whole period of the epidemic.

3. *Not to use, and especially not to drink, the water from the river in which ships are anchored*, or, at any rate, of water drawn from the vicinity of, or below, the anchoring ground. It would also be well altogether to avoid, during the continuance of an epidemic, taking in supplies of water from a river flowing by a large town.

4. *To look after the health of the crew* by inspections twice a day made by a medical man or the captain, with a view to finding out whether any cases of diarrhœa exists. Any person affected with diarrhœa and, still more, every case of confirmed cholera breaking out on board ought to be removed to hospital; if any cause should arise, such as the physical exhaustion of the patient, to prevent his removal, he should at least be isolated on board from the rest of the crew, and his cot placed in a spot accessible to free ventilation. In regard to the disinfection of the vessels receiving the *dejecta* of the patient and also that of his effects and the cabin occupied by him, &c., it should be proceeded with according to the general rules laid down by us for the disinfection of ships. A ship attacked by cholera should be removed as far away as possible from all others, and in certain cases it would even be preferable to send her out to sea.

The Committee believes it is necessary to suspend the loading of a vessel, if cholera exists on board, until she has been cleared of the sick, and the needful disinfection completed.

SANITARY POLICE REGULATIONS ON THE DEPARTURE OF A VESSEL.—Every ship leaving an infected port presents a double danger: that of cholera breaking out on board, and that of the disease being carried by her to a yet uninfected port. The task of the authorities at the port of departure is to ward off both these dangers as far as possible, and for this purpose their attention should be directed to the following points:—

1. *The state of health and the capacity of the ship.*—We have nothing to add in regard to either point to what we have said in our report, except perhaps that, on the departure of a ship from a port where cholera prevails, it would be well to reduce the number of passengers to even below the limit laid down by law as the proportion to the tonnage of the vessel in ordinary times, so as to avoid crowding as far as possible, and to admit of the separation of the sick from the healthy in the event of cholera breaking out on board. With the object of preserving the passengers from the grievous accompaniments of overcrowding and other cause of unhealthiness, as much as with the object of restricting emigration *en masse* from a port already compromised, it would be well perhaps, during the prevalence of the epidemic, to prevent the transport of passengers by merchant vessels, *i. e.*, such as are exclusively devoted to carriage of merchandise. We leave each Government to decide for itself whether, for the attainment of this second object, a considerable limitation, in special cases, should not be ordered as to the number of deck-passengers in packet boats.

2. *The sanitary condition of the men to be embarked.*—We have already said in our report that the sanitary condition of the crew,

as well as of the passengers, should be strictly looked to by a physician. The embarkation of individuals presenting suspicious symptoms should be prohibited; a sharp attack of diarrhœa should be considered as suspicious. As for chronic cases of diarrhœa, as they occur specially in hot climates, (in India for instance), the only remedy for them being a change of air, an exception might be made in their favor, notwithstanding the endemicity of cholera, if their chronic nature is certified to by a medical man.

3. *The quality of the ship's provisions.*—Besides the sufficiency and unexceptionable quality of the water and provisions always required, it is necessary while the epidemic continues, and especially in ships having women and children on board, to avoid as far as possible having provisions known to be indigestible, which, by causing a derangement of the digestive organs, may favor the outbreak of cholera.

4. *The quality of articles of personal use.*—The shipment of foul linen and clothing should be prohibited, including the linen worn by persons embarking, and which may have been soiled by choleraic *dejecta*. It should be made obligatory and imposed as a condition of embarkation to have them washed, and if necessary disinfected previously.

5. *The quality of the merchandise.*—In addition to carrying out the general instructions in regard to the good sanitary condition of the merchandise as laid down in our report, the embarkation should be prohibited in a port affected by cholera of certain articles more susceptible than others of communicating transmissible diseases. To this class of dangerous objects belong skins, for instance, clothes, rags, and drills which may have been used by cholera patients. Even after the extinction of the epidemic, the last three articles ought not to be exported until after satisfactory disinfection. The shipment of living animals (as articles of commerce) on a vessel carrying passengers should be prohibited on account of the crowding and the sources of infection, which are so largely increased by such an additional freight and its emanations.

6. *The personal luggage and effects of the passengers and crew ought to be kept in a place altogether separate from that intended for merchandise,* so as to avoid exposing the latter to contamination by the former.

7. Lastly, *the presence of a physician on board* of every ship carrying a certain number of persons (whether passengers or crew) to a certain distance ought to be made obligatory, especially in epidemic seasons. It would be desirable to observe the same rule in regard to pilgrim ships, provided however its execution be possible.

SANITARY POLICE OF THE VOYAGE.—This should comprise:—1*st*, measures to prevent the invasion of cholera; and 2*nd*, measures to be adopted in the event of attacks of cholera on board.

In the first point of view we recommend:—

1. *A strict surveillance of the sanitary condition of the passengers and crew,* and, with this object in view, daily visits of inspection by the ship's surgeon or one of the ship's officers. To facilitate this surveillance, the crew and passengers should be informed by *instructions* posted up in the cabins, &c., of the importance of certain hygienic measures, and especially of the danger of neglected diarrhœa.

2. *A constant ventilation of the whole ship,* and especially of the cabins, the forecastle, and the 'tween-decks occupied by the passengers.

3. *A frequent ventilation of the personal effects of the passengers and crew,* which is all the more necessary inasmuch as it is almost the only possible means on board a ship of warding off the danger arising from the emanations from soiled articles,—the washing of soiled linen being hardly practicable during the voyage on board a ship containing a great number of passengers. In order to avert any danger which might result from this ventilation, care should be taken to expose the articles to the action of the air to leeward.

4. *To maintain with the most particular care the neatness and cleanliness of the latrines.*—They should be washed frequently every day, disinfectants even being added to the water.

In the second point of view we insist upon:—

1*st.*—*The separation of the sick.*—It would be desirable to remove every sick man as far as possible from the healthy; but as, in the majority of cases, the limited space of ships will not permit of this being done, it is necessary at any rate to separate the sick showing symptoms of cholera. For them a sort of isolated infirmary should be set up, and, weather and space permitting, it should be situated on the deck itself, or in any other place accessible to free ventilation.

2*nd.*—*Immediate measures of disinfection.*—These measures should apply not only to the excreta of the sick, to their linen, personal effects, and bedding, but also to their cabins or any other places occupied by them, from which everything (furniture, &c.,) not absolutely necessary for the use of the sick should be removed immediately on the appearance of the attack. A cabin which has been occupied by a patient should not be put into use again until after it has been ventilated and disinfected for a week.

3*rd.*—*Certain precautionary measures in regard to persons suffering from diarrhœa.*—They should not be allowed to make use of the latrines common to all the passengers, but a place should be assigned to them which should be washed, with the addition of disinfectants, several times daily.

4*th.*—*The entry in the ship's log of every case of sickness occurring during the voyage.*—The ship's surgeon should keep up and be responsible for such a log, written by himself, and showing, in addition to the cases of sickness, all the hygienic conditions of the ship during the voyage, such as nourishment, neatness, ventilation, &c.

In conclusion, we think we ought to pronounce an opinion upon the question whether:—

If cholera breaks out on board during the voyage, it would be better to continue the voyoge or put in at a port ?

The solution of this question depends upon various considerations, the chief of which only we can mention, without, however, attributing to them an absolute value: they may serve as a guide to captains in coming to a decision. The continuation of the voyage does not appear to us to increase the danger, and it would perhaps, in this point of view, be preferable to putting in at a port:—

1*st.*—If the crew and passengers have already been subjected to the influence of a choleraic atmosphere;

2*nd.*—If the places to which the ship goes, or the season, admit of free and constant ventilation;

3*rd.*—If the state of health of the ship is satisfactory, and especially if the crowding is not great, so as to admit of the separation of the sick.

Under contrary conditions it would be preferable to return to the port of departure, or to put in at another port, rather than to continue the voyage.

We conclude, therefore, that it is necessary to avert the inconveniences and dangers resulting from—*a bad anchoring ground, from badly chosen drinking water and provisions, from overcrowding, from the sanitary condition of the men embarked, from the condition of their personal luggage, from the quality of the merchandise, from the absence of separation of the sick, the want of ventilation of the ship and personal luggage, and especially from the absence of neatness and cleanliness in the latrines.*

GALATA-SERAI; *August* 20, 1866.

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 16, OF THE 14TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its sixteenth meeting at Galata-Serai, at noon of the 14th June 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty the Emperor of Austria.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to H. M. the Shah of Persia.

For Belgium:

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

For Spain:

Don Antonio María Segovia, Consul General Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of H. M. the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to H. M. the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(*For Egypt:*)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi, one of the Secretaries, read the minutes of the 14th meeting, that of the 9th June. They were approved.

H. E. the President proceeded to the order of the day, *viz.*, the continuation of the discussion on the general report, and invited M. Fauvel to speak.

M. Fauvel said that, agreeably to the decision of the honorable Conference, he had written out the new paragraph relating to Persia. The way in which it was drawn up would, he hoped, satisfy every body, for he had kept in view all the interests—the true interests—both of Persia and the Conference, whose only object was the discovery of scientific truth.

The paragraph, he said, might be intercalated between the 2nd and 3rd paragraphs of the 2nd chapter of the general report. It was as follows:—

"The Conference does not wish to include Persia among the "countries just enumerated: it thinks that this country deserves special "mention on account of her geographical position, the importance of her "relations, and the numerous epidemics of cholera of which she has "been the theatre.

"In point of fact, it is proved by authentic documents supplied by "the Ottoman Sanitary Administration, that, without taking into "account those anterior periods of which we have no accurate notion, "Persia has, in the space of 11 years, (from 1851 to 1862,) been "nine times visited by choleraic epidemics, *viz.*, in 1851, 1852, "1853, 1855, 1856, 1857, 1858, 1860, and 1861. It is proved "from these same documents that, of these nine epidemics, that "of 1851 seems to have been imported into Persia by way of "Bassora, where it had raged in the first instance, and then by various "other points in the province of Bagdad. It is also proved, in regard to "the other eight epidemics, that the disease existed in Persia before it "invaded the Turkish territory, following in the wake of the pilgrims "either *viâ* Mohammerah, or by many other points of the frontier, and "notably Khaneguine and Mendeli. It must be added, however, that, "in three out of these eight invasions, it was not found possible to "follow up the chain of facts demonstrating the importation from "Persia into Turkey.

"In the opinion of the Conference, this frequency of epidemics of "cholera in Persia does not prove that the disease is endemic in that "country, since an interval of three years and a half (from 1862 to "1865) occurred during which no choleraic manifestation whatever was "noticed; but the matter deserves careful attention."

Having read the paragraph, Dr. Fauvel handed in a chart, drawn up by himself in 1851, of the Ottoman Sanitary Service in its entire length along the extent of the Turco-Persian and Turco-Russian frontier, from the Persian Gulf to the Black Sea. In this chart, which he said he had endeavored to render as accurate as possible, and which might advantageously be consulted in order to comprehend certain details relative to the question under discussion, Mohammmerah, which he thought was rather below Bagdad, and which some Delegates placed above Bagdad, was shown on the east of that town, on another branch of the delta flowing into the Persian Gulf. He admitted, nevertheless, that this branch was rather above Bassorah (as Mirza Malkom Khan had maintained at the last meeting).

M. Sawas asked that certain facts, which he thought were very important, should be mentioned in the paragraph just read by M. Fauvel. They were:—

1*st.*—That it had been shown that many travellers and physicians of repute, by whom Persia had been visited before the invasion of 1821,

made no mention whatever of endemic cholera, although they spoke very explicitly and in detail of other existing diseases.

2nd.—That, before the said invasion, no denomination applicable to epidemic cholera existed in Persia.

3rd.—That, in the space of forty-three years, Persia transmitted cholera to Russia only four times ; and that, from the year 1861 down to the moment of speaking, cholera had no existence in Persia.

That, on the other hand, it was proved from the reports of the Turkish sanitary physicians on the Turco-Persian frontier that, during the years 1851, 1852, 1853, 1855, 1856, 1857, 1858, 1860, and 1861, the same frontier had been the theatre of successive epidemics of cholera, which did not pass beyond the limits of Mesopotamia.

According to the view taken by Dr. Sawas, the following conclusion might be come to :—

" The Conference is of opinion that cholera is not endemic in Per-
" sia ; but it believes that Persia, being, by reason of her geographical
" situation, right in the passage of cholera, is liable to receive and to
" transmit the disease to her neighbours frequently."

M. Fauvel saw no harm in adding the facts mentioned by the last speaker to the new paragraph ; but he thought it would be sufficient to embody them in the minutes, which would necessarily have to be done, and every body might learn them there.

M. Millingen believed that Persia had transmitted cholera to Russia five times in the space of forty-three years.

At the request of several Delegates, H. E. the President put to the vote M. Fauvel's new paragraph, comprising the three points noted by M. Sawas, *viz.* :—

1st.—That before 1821 cholera had no existence in Persia.

2nd.—That until that time the disease was not known by any special designation.

3rd.—That, during the space of 43 years, Persia transmitted the disease to Russia only four times.

The paragraph, thus completed, was adopted by a majority of 22 votes against one, M. Polak, who abstained from voting.

M. Sawas made the following declaration :—

" The Persian Delegates dispute the existence of cholera in Persia
" from the year 1856 to the end of the year 1858, reserving the right of
" producing official proof of what they maintain."

H. E. the President reminded the Conference that, after the Persian question, they had to vote on the question of the islands of the Indian archipelago, in regard to which M. Van Geuns had furnished ample information at the last meeting.

M. Van Geuns said he wished to afford some further explanations of the matter.

The denomination of Indian archipelago, he said, was very vague, and to a certain extent incorrect, for, broadly speaking, it might comprise Oceania or the fifth part of the globe. But if the Conference thought it did not possess sufficient data to exclude this from the list of doubtful countries, it might, and it was authorised to do so with regard to Malasia. M. Van Geuns believed that, in place of saying "Indian archipelago," it would be much better to say "Malasia," which denomination, he remarked, was adopted in the modern system of geography, which admitted the distinction, and which considered Malasia as a part of Oceania.

M. Fauvel said he wanted to know in what category the islands of the Indian archipelago should be placed if they were struck off the list of doubtful countries. M. Fauvel had thought that M. Van Geuns only meant to exclude from this category the Dutch possessions in regard to which he might possess accurate and sufficient information. But it had just been seen that such was not the intention of M. Van Geuns. M. Fauvel would ask whether the island of Borneo could be classed among the Dutch possessions, and could it be said that the existing and available knowledge of that island was satisfactory? Everybody knew that the island of Borneo, the greater portion of which was independent, and which was peopled by wild and barbarous tribes, was almost entirely free from Dutch domination. An Englishman—Rajah Brooke—had occupied a portion of the country, and erected it, so to say, into a kingdom.

M. Van Geuns replied briefly to M. Fauvel, having, he said, spoken sufficiently about the island of Borneo at the last meeting. In his memorandum he had shown the importance of the fact that the researches and enquiries undertaken by the Dutch Government extended throughout an immense population, while the number of the population in regard to whom data were wanting was relatively small. Brooke himself, added M. Van Geuns, had personally undertaken researches and enquiries, which he had also caused to be pursued by others. There was a remarkable work in two volumes on the island of Borneo, written by a relative of M. Van Geuns. The mortality caused by cholera in the population was said to be small, which would not be the case if the disease was endemic. The possessions of other Governments were also almost as well known as the Dutch possessions proper.

M. Segovia said that the Spanish Delegates did not think it necessary on that occasion to speak of the Spanish possessions in Oceania, *viz.* the Marianne and Philippine islands, including the Sooloo group, over which Spain exercised a sort of protectorate, The Spanish Delegates believed that they would not only be excluded from the rather vague and inexact denomination of the Indian archipelago, but also that nobody would ever dream of suspecting the endemic existence of cholera in those parts.

M. Segovia thought it would be useful to give a list of the Spanish possessions in Oceania:

The Philippine islands, including the Bisayan group.

The Marianne islands, to the north-east of the Philippines.

The Sooloo group, under the Protectorate of Spain by virtue of lately ratified capitulations.

M. Gomez confirmed, with reference to the Portuguese possessions in the Indian archipelago, all that had been said by M. Van Geuns with regard to Netherlands India.

M. Bartoletti observed that a question of such great importance, and so interesting to science and humanity, should not be lightly discussed. There should be no question of favors or concessions, of individual or national interests, when the public weal was concerned. It was known that the majority of the pilgrims arriving at Jeddah consisted of Javanese, and that cholera was very often brought to that port by them. It had been said that last year there were ten thousand of these Javanese pilgrims in the Hedjaz. It was a known and recorded fact that ten English ships had left Singapore laden with pilgrims, each ship carrying five or six hundred Javanese. In addition to these, six Mussulman vessels, also laden with Javanese pilgrims, sailed to the Hedjaz. It was impossible, said M. Bartoletti, to form an idea of their miserable and filthy condition, and of the manner in which they were crowded and huddled together on board these vessels. It was the most deplorable and frightful picture that could be conceived. Foreign vessels weighed anchor on their approach. Without pretending that cholera was endemic in Malasia, said M. Bartoletti in conclusion, it was necessary to be most guarded and cautious in regard to the matter, especially with reference to Singapore, which might be considered an Indian country.

M. Van Geuns observed that even if cholera were brought to the Hedjaz by the Javanese pilgrims, that fact would not prove the endemicity of cholera in the islands of the Indian archipelago, as the pilgrims might have caught the infection during the voyage.

Dr. Goodeve pointed out the necessity of not stopping at the erasure from the list of doubtful countries of the Dutch, Portuguese, and Spanish possessions, but also to eliminate the British possessions. The category had been established because, being in proximity to continental India, the possessions in the Indian archipelago, which were believed to be insufficiently known, might, by their similarity of climate, cause the existence of the doubt that cholera might exist in them endemically. But M. Van Geuns had demonstrated that cholera did not exist endemically in any country in the Indian archipelago belonging to Holland, and he had simply maintained some reserve in regard to Malacca, which might be considered a doubtful country on account of its proximity by land to Bengal. Consequently, said Dr. Goodeve in conclusion, as analogous reasons militated in favor of the other possessions, equity demanded that they should be struck out of the list of doubtful countries.

On the proposition of M. Mühlig, who showed that the question had been reduced to an almost personal one, the Delegates of each

Power, taking up the defence of the interests of their own country, and that consequently the Conference would do well to proceed to the order of the day, H. E. the President declared that the discussion on the chapter on the islands of the Indian archipelago was closed, and he put to the vote the proposition made by M. Van Geuns, *viz.* :—

"The Dutch possessions in the Indian archipelago are excluded "from the category of doubtful countries, because no suspicion exists of "the endemicity of cholera in them."

The proposition was adopted by a majority of fifteen against nine, and two who declined to vote.

For:—MM. Polak, Noidans, Segovia, Monlau, Goodeve, Dickson, Vernoni, Van Geuns, Millingen, Mirza Malkom Khan, Sawas, Gomez, Lenz, Bykow, Stenersen.

Against:—MM. Sotto, Spadaro, Lallemand, Fauvel, de Krause, Mühlig, Hübsch, Bartoletti, H. E. Salih Effendi.

Declined to vote:—MM. Maccas and Bosi.

M. Stenersen said he had voted in favor of the proposition of M. Van Geuns, because the greater part of those who had attentively considered the question were agreed in admitting the non-endemicity of cholera in the Dutch possessions. But as these countries must become very dangerous to Europe by reason of the frequency of the epidemics raging in them, M. Stenersen was of opinion that it was necessary to insert a special paragraph about them in the general report, as had been done by the Conference in regard to Persia.

M. Stenersen expressed a wish to be informed of M. Fauvel's opinion upon the question, and begged he would be good enough to state it.

M. Monlau asked for explanations in regard to what was meant when the insertion of new paragraphs in the report was mentioned. In his opinion nothing could be added to the Committee's report; it should rest intact as it had been presented to the Conference—otherwise it would cease to be the work of the Committee. It ought also to be inserted as it stood as an annexure to the minutes of the meeting at which it had been presented. All the modifications, amendments, and additions adopted by the Conference during the discussion should, he thought, find their place in the minutes. To reprint the general report with the text differing from what had been drawn up and distributed by the Committee, would be nonsense—it would convert it into a report drawn up by the Conference itself. That, he said, was opposed to all the customs prevalent in assemblies in regard to reports composed by special Committees and discussed before such assemblies.

M. Monlau's remarks gave rise to a conversation in which MM. Lallemand, Fauvel, Goodeve, Dickson, Bosi, Maccas, Mühlig, and Bartoletti, took part, on the one hand, in support of M. Monlau's proposal; and MM. Chevalier Pinto de Soveral and Sawas on the other, against it. M. de Soveral thought that only such reports as had been

adopted by the Conference were definitive, so as to impart to their conclusions the force of law. Consequently, he said, it was necessary to reprint the general report with the modifications accepted by the Conference, if it was desired that it should be regarded as the work of the Conference, and as an act and document emanating from itself.

MM. Maccas and Mühlig proposed that the Conference should proceed to the order of the day, reserving the right of acting later, and after the termination of the discussion on the general report, as it might deem best and most fitting.

The Conference having decided in this sense, His Excellency the President asked M. Fauvel to continue the reading of the general report.

M. Fauvel was of opinion that it was necessary, in the first instance, to put the text of the 2nd chapter to the vote and then the conclusions.

M. Salem Bey begged to invite the attention of the honorable Conference to the eastern and southern coasts of Arabia also, which might, in his opinion, be struck out of the list of doubtful countries, as had been done with Persia and the islands of the Indian archipelago. The considerations which had been urged in behalf of the latter, militated also, he thought, in favor of the Arabian peninsula. Many Arabic authors who had written upon the province made no mention of cholera as an endemic disease.

M. Bartoletti added that if it were true that cholera was not endemic in Persia, it was also true that neither was it so at Muscat.

M. Sawas said that, with the exception of Muscat, the other provinces of the Eastern coast were altogether unknown, for no traveller spoke of them, and, in respect to Muscat, everybody was agreed in regarding it as an extremely unhealthy country, where cholera almost always existed.

His Excellency the President put to the vote the text of the 2nd chapter of the report, with the amendments adopted by the Conference.

It was agreed to by a majority of 20.

M. Maccas requested that the word *invading* in the conclusion should be eliminated. The word, he thought, which in the text was necessary or at any rate unobjectionable, was altogether superfluous in the conclusion, which spoke of Asiatic *cholera*. It was worse than useless, he thought, and it might give rise to misunderstandings by tending to occasion the idea that there was any other but an invading kind of Asiatic cholera.

Dr. Dickson seconded the motion made by M. Maccas, but it was opposed by MM. Sawas and Fauvel, who said that, in their opinion, the term served to give greater force and effect to the leading idea of the conclusion, and that therefore not only was it not superfluous, but that it might even be considered to be necessary.

His Excellency the President put the conclusion to the vote as it stood.

It was adopted by a majority of 19 against 2.

The 3rd chapter was agreed to unanimously.

The discussion then proceeded to the 4th chapter.

Dr. Dickson remarked that it had not been recorded that he had voted against the chapter. He was of opinion that the disease existed in the Hedjaz, and especially in Yemen before the time of the pilgrimage.

M. Mühlig said he had voted for the chapter, but after the explanations given by Dr. Goodeve, and particularly after the occurrences of the present year, which had greatly staggered his belief, he wished, that the chapter should be modified thus :—

" Asiatic cholera does not appear to have an original source in the Hedjaz, but it frequently rages there, imported *probably* from without."

M. Mühlig wanted to know whether the Persians did not ask for the elimination of Persia from the list of doubtful countries merely because they wanted to avert from their frontiers the institution of sanitary measures.

H. E Salih Effendi said he was inclined to believe that the southern pilgrims had, the year previous, imported and spread cholera in the Hedjaz.

Dr. Goodeve opposed any such supposition.

Dr. Bartoletti, on the other hand, affirmed that it was not proved by any sort of documentary evidence, that cholera had existed the year before in the Hedjaz previous to the arrival of the pilgrims, while it had been demonstrated that in 1864 it existed at Singapore, from which port sixteen ships laden with pilgrims had arrived in the Hedjaz, after a voyage of fifty days. It should not be forgotten, he said, that in Persia as well as in the Hedjaz, it was always the pilgrimage which rendered cholera almost endemic. In regard to the present epidemic, Dr. Bartoletti was inclined to attribute it to the communication which had taken place with Abyssinia where cholera had already been raging.

M. Van Geuns was of opinion that the Hedjaz might be exonerated if they could be put in possession of all the facts, duly recorded in reports, referring to the various epidemics and especially to that of 1865. That, in his opinion, was all the more necessary inasmuch as every fact admitted of different interpretations.

Dr. Salem Bey believed that the Hedjaz was a country which should be suspected less than any other. The importation of cholera into it from without had always beeen distinctly shown, and it had always been effected by the pilgrims. A glance over the table of choleraic epidemics (arranged in order of date) which had successively

prevailed in Egypt, would suffice to demonstrate the importation of cholera into the holy places. The dates were :—

July 13, 1831 ; June 24, 1848 ; July 25, 1850 ; June 4, 1855 ; June 11, 1865 :—five epidemics in all.

A somewhat important fact deduced from the history of these five epidemics, was as follows :—

" Egypt has only twice been invaded by cholera on the return of the pilgrims from Mecca, *viz.*, in the first epidemic of 1831, and in that of 1865."

It was necessary, added Salem Bey, to remark that the pilgrimage which took place every year was always watched by physicians who accompanied the caravan across the breadth of the Hedjaz, which showed that the importation of the disease into Egypt was clearly proved.

The other three epidemics having occurred some months before the pilgrimage, the Hedjaz, he concluded, could not be suspected of maintaining cholera endemically, especially if it were considered that cholera had only attacked the pilgrims when the religious observances coincided with the hottest months of the year, and, what was more, it was a most distinctly known fact that, in the last epidemic, cholera had been spread by the Indian pilgrims.

To exclude, added Salem Bey, all idea of an original focus of cholera in the Hedjaz, it was necessary also to take largely into account the geographical and social conditions of that country, which was traversed by immense deserts.

M. Bosi wanted to know whether precise information existed in regard to the present epidemic. Where had it originated, and how had it been imported into the Hedjaz ?

M. Bartoletti replied that, judging from all appearances, the disease, as he had observed at the previous meeting, had broken out at Bader, and had manifested itself along the road leading to Medina : some cases had also shown themselves among the pilgrims remaining at Mecca. It appeared certain, added M. Bartoletti, that there had been no cholera during the pilgrimage. It existed at Gondar and in some other parts of Abyssinia, and it was probable, he thought, that the present manifestation of cholera originated in Abyssinia.

Dr. Dickson referred to the epidemic of 1865, and said he could not understand the motives which had induced M. Bartoletti to derive it from Singapore. Dr. Dickson did not mean to deny any of the facts put in evidence before the Conference, but he held that the 4th chapter of the general report should be modified in conformity with the facts, where it said :—" It has been asserted that, in effect, persons from India, infected with cholera, had arrived in the Hedjaz before the disease had as yet shown itself there"—as also the conclusion of the same chapter.

Dr. Dickson proceeded to mention the facts as they had existed.

Letters from Ahmed Pacha, Governor of Yemen in 1865, addressed to his family, proved that cholera had been raging in Yemen *before the period of* the pilgrimage to Mecca. The reports of the British consul at Jeddah showed that, during the six years of his residence in the country, cholera, he had observed, always appeared there after the return of the pilgrims from Mecca.

Official information from the English agents in the Persian Gulf gave credit to the supposition that cholera existed *permanently* on the Arabian coast of the gulf. Other reports mentioned its existence on the coast of Hadramaut and notably at Mokalla. These, together with the actual existence of the disease in the Hedjaz at the present moment, while it could not be shown to have originated out of the country, caused him to deem it *very probable* that cholera had acclimatized itself there.

Dr. Dickson would admit indeed that in 1865 cholera existed at Singapore, that two ships laden with pilgrims had quitted that port, and that, after a very long voyage, during which no accident had occurred on board, they touched at Mokalla ; that, after their departure from that town, a choleraic epidemic had broken out amongst them, which had ceased before their arrival at Jeddah ; and that, finally, the disease was heard of no more until after the accomplishment of the sacrifices at Mecca, when a violent outbreak of the disease took place.

But what connexion, he would ask, existed between the cholera of Singapore and the epidemic at Mecca ? Admitting even for an instant that cholera was not endemic in the Hedjaz, was it not greatly more probable that it had been imported from Mokalla ? and especially from Mocha, a port in the Red Sea, situated on the route of the pilgrims when porceeding to the holy places.

Moreover, added Dr. Dickson, it would appear, according to Dr. Bartoletti, that the manifestation of cholera during the present year in the Hedjaz had had its origin in Abyssinia. But the documents on which Dr. Bartoletti had founded his assertion, showed, on the contrary, in his (Dr. Dickson's) opinion that the Egyptian frigate *Ibrahimia* quitted Massowah under a *clean bill of health*, and arrived at Jeddah on the 23rd May, with letters from Massowah intimating that two or three cases of cholera had occurred every day for a week previous to the departure of the vessel. But *before the vessel could enter into pratique and communicate with Jeddah*, cholera showed itself in the town in the person of an individual *who had been under watch* in the military hospital for ten days ; and the Soudan pilgrims, who were on their return from Mecca, affirmed that the disease had broken out among their compatriots on the 19th May. Further, Dr. Bisemstein said that cholera had made its appearance simultaneously at Medina, Beder, and Yambo, and—to which fact Dr. Dickson would draw particular attention—not after the assemblage of the pilgrims, not during the sacrifices, but twenty days after the termination of the ceremonies, and notably after the departure of the caravans, and even after the arrival of a portion of the pilgrims at Jeddah and Suez.

He hoped that the Conference would estimate the facts brought forward by him at their proper value, and modify the conclusions of the report in accordance with them.

He was of opinion, in regard to the present epidemic, that it was not conclusively proved that it had originated in Abyssinia, as Gondar and the other places in which the existence of the disease had been announced, were quite in the interior of the country. It would, therefore, be a very much over-strained explanation, in comparison with the evident proofs in favor of the other version, to suppose that the germ of cholera had been carried to the coast and thence to the Hedjaz.

M. Bartoletti said, in reply to Dr. Dickson, that facts could not be distorted. Cholera, in spite of whatever might be said, had come from Singapore, as resulted from the evidence of the reports he had communicated to the Conference at the last meeting. He persisted in his belief that the explanations he had given carried much more probability with them than those put forward by Dr. Dickson.

M. Millingen showed the necessity of being acquainted with all the documents bearing on this important question. These documents might be procured by H. E. the President. He meant letters from Ahmed Pacha, the sheriff of Mecca, and other similar documents.

On the motion of M. Vernoni, supported by M. Bartoletti and other Delegates, who insisted on the necessity of being put in possession of the documents just spoken of by M. Millingen, and in the absence of which no decision could, from a want of knowledge of causes, be arrived at, H. E. the President adjourned the discussion to the next meeting. In the meantime, he said, he would endeavor to obtain the required documents.

M. Bartoletti made a communication of present importance. After the receipt of the last advices from Egypt, and with a view to compliance with the wishes expressed by the Conference, the Superior Council of Health had subjected arrivals from Egypt, under every denomination of bill of health, to fifteen full days of quarantine, which was to continue until further orders.

M. Bartoletti read the last telegram despatched by Colucci Bey to the Sanitary Intendancy at Constantinople under date the 13th June.

It was as follows :—

Alexandria, 4-15.

"Drs. Bisemstein and Castaldi arrived at Suez on the 11th June, "and have announced, that about 3,000 pilgrims have decided to leave "for Suez by sea, and that their intervention, as well as that of the "local authorities, was of no avail in preventing their departure.

"The Egyptian Intendancy acts up to the rules laid down by "the Conference, and when these pilgrims show themselves off Suez,

"they will be driven away and compelled to go into quarantine at "Jeddah, Tor, and Mohal.

"Dr. Ferro leaves to-morrow in a special steamer for Yambo, with "two professors of the Cairo School of Medicine, carrying with them "medicines and provisions.

"To-day Drs. Bisemstein and Castaldi go on board the steamer "intended for Dr. Ferro, which will land them at Jeddah.

"Health perfect in Egypt. Not a single case of sickness of any "kind among the persons in quarantine at the Wells of Moses. Pra- "tique will be given the day after to-morrow. Commission despatched "to Suez reports no sickness there."

Salem Bey said that, after the communication just made by M. Bartoletti, it was evident that the Council of Health had adopted, for the sake of precaution merely, very severe measures of quarantine with regard to Egypt, the health of which country was, and continued to be, perfectly satisfactory, as was shown by the despatches read by him at the last meeting. This day again there was very reassuring news. The sanitary condition of Egypt was perfect: at Alexandria there was only one case of sporadic cholera. Even in the Hedjaz there was a diminution of the disease. Nothing, therefore, in his opinion, justified the very rigorous measure inflicted on Egypt, by regarding her as under foul bills, notwithstanding the clean bills of health delivered by the authorities. He thought that such measures could not but be fraught with evil by reason of the alarm they occasioned.

M. Fauvel completed the information just afforded to the Conference. He explained the measure adopted by the Superior Council of Health. It was not, he said, on one single despatch received from Egypt, but on a mass of despatches, reports, and telegrams forwarded by the consular agents and by the Sanitary Intendancy of Alexandria, that the Council of Health at Constantinople had decreed the measure of quarantine of which they had been informed by M. Bartoletti. The British consul spoke of some sporadic cases of cholera at Suez. A despatch from the Egyptian Sanitary Intendancy mentioned some cases of virulent fever at Suez, and added, (care being taken to underline the word,) "with *cramps*." It was right to say, added M. Fauvel, that the reports of the Egyptian Sanitary Intendancy left some doubts. From all sides the news had been received that in Egypt, at Alexandria, and at Suez, sporadic cases of cholera, or of choleraic virulent fevers, had been observed, which really proved that sporadic cholera existed. With Asiatic cholera prevailing at Jeddah, Yambo, and elsewhere, was there not reason to ask whether these cases were not the prelude of an epidemic, and did not prudence demand of them to act accordingly?

It was this consideration, said M. Fauvel, which had determined the decision of the Council of Health.

Many Delegates concurred in M. Fauvel's opinion.

M. Bartoletti read another despatch received from Alexandria on the 12th June at 10-45 A. M. :—

"Public health in Egypt perfect: some cases of virulent fever at "Suez, with a tendency to decrease. Nevertheless, a Medical Com- "mission despatched to Suez to report distinctly upon the nature of "the disease.

"Nothing new since the isolated case of sporadic cholera of 7th "June in the person of an individual come from without to the Alex- "andria hospital. Cholera at Jeddah, Mecca, Yambo, and Beder. At "Jeddah, on the decline, and nearly disappeared. At Yambo intensity "greater—55 cases altogether to the 11th Mohurrum; 102 cases to the "15th Mohurrum. At Mecca number of deaths not known. At Beder, "said to be causing great ravages amongst the pilgrims. Health of the "persons in quarantine at the Wells of Moses perfect. Strict mainte- "nance of interdiction of sea-route. Pilgrims supported at the cost of "the Egyptian Government, which Government demands from the "Governor of the Hedjaz the means of land transport to be furnished "to them. As for the 106 deaths on sea from Jeddah to Suez, the "report is a complete fiction."

(Signed) COLUCCI BEY.

The meeting terminated at 6 P. M.

Order of the day for the next meeting :—

1*st.*—Continuation of the discussion on the choleraic epidemic of 1865.

2*nd.*—Continuation of the discussion on the general report.

3*rd.*—Miscellaneous communications.

SALIH,
President of the Sanitary Conference.

DR. NARANZI,
BARON DE COLLONGUE, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 17 OF THE 16TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its seventeenth meeting on the 16th June 1866, at Galata-Serai.

PRESENT :

For Austria :

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

For Belgium:

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to H. B. M.'s Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of H. M. the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia :

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia.

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

For Russia :

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway :

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey :

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt :)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

Baron de Collongue read the minutes of the 15th meeting, and Dr. Naranzi those of the 16th. The Conference adopted both, with a few amendments, and then proceeded to the discussion of the 4th chapter, of Dr. Fauvel's report, regarding the Hedjaz.

Dr. Fauvel thought it right to state distinctly that the conclusion of the chapter, *viz.*, that "Asiatic cholera does not appear to have an "original source in the Hedjaz, but that it seems to have always been "imported into that province from without," was in no way positive: it confined itself to stating a probability and not affirming a certainty.

M. Bartoletti spoke in support of the conclusion arrived at by the Committee, which was founded, 1*st*, on the fact that cholera was unknown in the Hedjaz before 1831, and that a name for the disease

even did not exist in the country; *2nd*, on the fact that the epidemics of 1835, 1846, 1847, 1848, 1859, and the following years, down to the great epidemic of 1865, always coincided with the period of the pilgrimage; *3rd*, on the fact that it is averred that, in effect, persons from India attacked by cholera have arrived in the Hedjaz before the manifestation of the disease there. Dr. Bartoletti, thinking it unnecessary to dwell upon the two first points, confined himself to producing some new facts relative to the importation of cholera into the Hedjaz in 1865. The chief authorities consisted of the declarations recorded in the report of the Ottoman Sanitary Commission for the Hedjaz, of the masters of three British ships which had brought pilgrims to Jeddah. The first of these vessels, the *Miss Marchant*, had on board 350 pilgrims from Bengal, 25 of whom died of diarrhœa during the voyage. The second, the *Boy-Neyr*, left Bengal during the prevalence of cholera with 100 pilgrims on board, 20 of whom died, 4 of them presenting all the symptoms of cholera. The third, the *Ruby*, had taken 500 pilgrims on board at Singapore, where cholera was also prevailing epidemically. Cholera broke out on board, carrying off 90 victims, the mortality commencing at Mokalla and not ceasing until two days before the ship's arrival at Jeddah. Three other ships, one from Bengal, the two others from Java, had also, according to the statements made by their masters, had cases of sickness on board. Dr. Bartoletti then proceeded to quote a report by the Dutch Consul at Singapore, which said in plain terms that the appearance of cholera in Arabia was to be attributed to the Indian pilgrims from Malacca, Timor, Sarawak, Johore, Pahang, and other independent states of the Malayan Peninsula; that, in 1864, cholera prevailed in Java and at Singapore, and that it was proved that persons ill with the disease, and others recovering from attacks of it, had embarked for Mecca. Passing on to the cases of cholera which had just shown themselves at Beder, Medina, Yambo, Mecca, and Jeddah, Dr. Bartoletti said he did not admit that they could be regarded as proofs of the endemicity of cholera in the Hedjaz. Moreover, they were only sporadic cases, the complete disappearance of which at Jeddah had been announced by the latest advices. Was it not, therefore, probable that they were only the last remains of the great epidemic of last year, and was it not still more probable that it was a fresh importation? The report of the Ottoman Commission showed that, at Mecca, cholera raged chiefly among the African pilgrims from Soudan, who arrived later than the others at Jeddah. The same report, speaking of the pilgrims who remained at Mecca after the departure of the Damascus caravan, said that these pilgrims had made every preparation to start for Medina, that one caravan had indeed already reached Yambo, when the epidemic made its appearance at Beder. The pilgrims returning *vid* Yambo were, for the most part, natives of India and Africans, whom the Government was compelled to support, on account of their destitute condition, and the duty of sending whom to their homes was assumed by the British Consulate. It was amongst these that cholera made its appearance at Beder, in the midst of the desert. Was that then a proof

of the endemicity of cholera at Mecca? and if such endemicity really existed, would not the epidemic have broken out during the ceremonies, when the pilgrims were still assembled together? It had been said, on the other hand, that cholera could not have been imported, because all the ports by which the pilgrims could have entered the Hedjaz were strictly guarded by the medical officers of the Ottoman Commission: but was that guard a strict quarantine, and could it, besides, be exercised everywhere? The report of the Commission mentioned notably, two ports which it was not possible to provide with medical officers, Rais and Rabel, which were closer than Yambo to Medina, and where, consequently, a large number of pilgrims landed, chiefly late arrivals from Africa. It was known that the first cases of cholera were noted as having occurred among these pilgrims, and was there not ground, therefore, for asserting it to be probable that cholera must have been imported into the Hedjaz from Africa, where it was raging? An extract from a report by M. Menzinger, French consular agent at Massowah, which was here read by Dr. Bartoletti, appeared to him to render the fact of the importation more probable. In that report, which was dated the 3rd May, it was shown that cholera raged at Adora and Gondar; that it had directed its march to the interior of Abyssinia through the tribes of the Bogas, Mensa, Hamacca, Hababs, and Beni-Amer; and that, as these tribes were in communication with Souakim, there was reason to fear that the disease would thus transmit itself along the coast of the Red Sea. He (Dr. Bartoletti) would vote against any modification of the conclusion of the report.

Dr. Dickson did not think that there was any sufficient reason in what had just been said for throwing off the doubt he had expressed. The fact of numerous ships from Bengal, Java, and Singapore having had cases of cholera on board before their arrival in the Hedjaz was not supported by any positive document. An official report by Mr. Raby, British Consul at Jeddah, stated, moreover, that cholera existed at Sana and at many places in the interior of Yemen, towards the end of the year 1864. Neither could it be denied that the pilgrims had that year been subjected to a strict surveillance from the moment of their embarkation, and that their sanitary condition was found to be satisfactory. Nor was there any well-founded connexion shown between the cases of cholera reported in the Hedjaz and the epidemic which prevailed in Abyssinia. Lastly, it was affirmed that of the five great and well-known epidemics at Mecca, two only had coincided with the season of the pilgrimage.

Dr. Mühlig asked the Conference to recollect that he had limited himself to proposing a slight modification in the conclusion of the chapter under discussion. He only desired that the second sentence of the conclusion should be changed thus:—"*but cholera prevails there frequently, probably always imported from without.*" He did not maintain that there was an endemic focus in the Hedjaz, but it was a question which yet needed study.

Dr. Goodeve thought, like Dr. Dickson, that the facts brought forward by Dr. Bartoletti did not suffice to establish a certainty. A

sailing vessel occupied upwards of two months in the voyage from India to the Hedjaz; and it was hardly probable that cholera could remain so long on board a vessel without extinction. Admitting that the three English vessels spoken of had shipped more passengers than the rules allowed, and that they lost very many during the voyage, it would still remain to be proved that they had cholera on board on their arrival at Jeddah. Would the debarkation of pilgrims, and especially of Indian pilgrims, have been permitted if they were sick? Was it known besides whether the ships in question had or had not made the voyage from point to point: did they put in at any port, at Mokalla for instance; did they not contract the disease there? Dr. Bartoletti, who had not even mentioned from what port of Bengal the three vessels in question had started, should have stated exactly when cholera broke out on board and when it ceased. To sum up:—If it were admitted that cholera was imported into the Hedjaz, in 1865, by Indian or Javanese pilgrims, it was anyhow hardly probable that the importation was effected by pilgrims coming direct from India. These pilgrims must, more probably, have received the disease at some of the Arabian ports at which they touched before their arrival at Jeddah.

Dr. Salem Bey read, in support of the conclusion arrived at by the Committee, a passage from Carl Ritter's work on Arabia, in which reference was made to the diseases prevailing in the Hedjaz, and where cholera was mentioned as an imported disease. He would not believe, until proof was given to the contrary, that the sporadic cases which had just shown themselves could be regarded as an epidemic: the disease having appeared, in the first instance, in the localities frequented by the pilgrims, its importation was almost evident. Dr. Salem Bey wished that the expression of doubt in the conclusion should be eliminated by the expurgation of the word "*appears.*"

Dr. Monlau remarked that the conclusion answered only a part of the fourth question. If it was probable that cholera was not endemic in the Hedjaz, in short, if there was no permanent original focus in that country, was it known that periodical and temporary original foci were not produced there? that was a question which demanded profound consideration, and with regard to which, as was proved by the present discussion, there were no data. Dr. Monlau proposed that the conclusion of chapter IV. should be modified as follows:—*Asiatic cholera does not appear to have a permanent original focus in the Hedjaz. As for the creation of periodical original foci, coincident with the season of the pilgrimage, the Conference, in the absence of sufficient data, does not deem itself justified to come to any formal conclusion upon the subject.*

Dr. Fauvel replied that the 4th question was evidently defectively drawn up, but it was not the business of the Committee to modify it. The two words *periodical* and *original* nullified each other. A periodical focus was not an original focus. The Committee had decided in regard to permanent foci; nothing was known in regard to the existence of temporary foci.

Dr. Millingen, while admitting that the repeated importation of cholera into the Hedjaz was always due to Indian arrivals, disputed the fact that this importation was always and exclusively effected by the pilgrims, and, consequently, that the various epidemics had always coincided with the time of the pilgrimage. It was not so, for instance, with the epidemic of 1846, which broke out at Jeddah and Yambo in the month of May, or six months before the Courban-Bairam, which that year fell in November. Dr. Millingen noticed the great fair held every year at Jeddah, at which were assembled merchants from the East Indies, the islands of the Indian Archipelago, and Malasia, bringing their commodities to be exchanged for those of the Hedjaz, Egypt, Abyssinia, the Persian Gulf, and the coast of Mozambique, as being a mode of importation to which the Committee had not paid attention. It was at the time of this fair, which had been known sometimes to attract to Jeddah as many as 216 vessels, great and small, that the invasion of cholera took place in 1846. Occasionally, as in 1831 and 1865, the fair was held at the same time as the pilgrimage, and it was precisely in 1831 and 1865 that the two great epidemics which had prevailed in the Hedjaz broke out. Dr. Millengen recommended these facts to the serious attention of the Committee which was to be appointed to consider the measures of quarantine to be applied to arrivals from India before their admission into the ports on the Arabian coast.

M. Stenersen said that Drs. Goodeve and Dickson had furnished no proof of the endemicity of cholera in the Hedjaz.

Some members expressing a wish to divide, Dr. Fauvel asked permission to speak in order to state the question distinctly: it was not whether cholera was imported into the Hedjaz from some country or other, but whether it was or was not endemic there. Drs. Goodeve and Dickson had brought forward no fact during the discussion to invalidate the conclusion of the Committee. Dr. Millingen again had only indicated a new mode of importation. From all that had been said, it resulted simply 1*st*, that cholera very often prevailed in the Hedjaz; 2*nd*, that, in all probability, it was imported. The conclusion, which said nothing more, should not therefore be modified. As for eliminating the expression of doubt in it, as was demanded by Dr. Salem Bey, that was not possible, considering the insufficient data of which they were in possession.

Dr. Sawas proposed the suppression of that part of chapter IV., commencing with the words "*and that lastly on several occasions,*" and ending with "*and again manifested itself there.*" Cholera was evidently imported into the Hedjaz, but it could not be affirmed that it was imported from India. The words "*does not appear*" should also, as demanded by Dr. Salem Bey, be struck out of the conclusion, and an affirmation substituted.

Dr. Fauvel observed that the Committee did not assert that cholera was imported from India into the Hedjaz: it limited itself, on this head, to regarding the generally received opinion in the country.

Nor did it say that on several occasions, and notably in 1865, arrivals from India, infected with the disease, had imported it into the Hedjaz; it simply stated that these arrivals had preceded the outbreak of the disease. It was necessary, moreover, not to confound the substance of the chapter with the conclusion, and in the conclusion even the name of India was not mentioned.

A great number of members insisting again upon the termination of the discussion, the President put to the vote, 1*st*, the text of chapter IV., 2*nd*, the conclusion.

The text was adopted by 18 against 4, *viz.*, Drs. Goodeve, Dickson, Millingen, and Sawas. Dr. Monlau declined to vote.

The conclusion was also adopted by a majority of 19, none voting against it. Three members, Drs. Monlau, Goodeve, and Dickson, declined to vote.

Dr. Fauvel then read the question and the conclusion of chapter V.

Count de Lallemand reproduced an observation he had made in Committee, by which it had been deemed proper and well-founded, as the Conference might see by reference to the minutes. He asked that the word *privilege* which figured in the question and in the conclusion, and which was not used there in its true sense, should be replaced by the word *property*.

Dr. Fauvel did not dispute the justice of the observation in a grammatical point of view. The word *privilege* conveyed more than the word *property*, for which reason he had thought it his duty to use it, even adding the word *exclusive* to give it still greater force.

A conversation ensued upon the subject, and Count de Lallemand not insisting, the text and the conclusion of chapter V. were then put to the vote and adopted (pro 18, contra 0.)

The text and conclusion of the first part of chapter VI. were similarly agreed to, their adoption giving rise only to a single remark made by Drs. Goodeve and Dickson. It was said in the conclusion that "the special conditions under the influence of which cholera is generated in India are not known:" the British Delegates objected to the word *generated*. They did not believe that cholera was generated *de novo* in the soil: it only maintained itself by successive transmissions, and (added Dr. Dickson) in the same way as the plague formerly in the East, so that its germ was not destroyed.

Dr. Goodeve then demanded the substitution in the conclusion of the 2nd part of chapter VI. of the words "*one of the most powerful*" for the words "*the most powerful.*"

M. de Krause brought to notice an apparent contradiction in the following sentence:—"that in Bengal cholera assumes an epidemic form more particularly during the *hot weather*, from April to August, while it is different in the North-Western Provinces, where the great epidemics have prevailed during the months of July and August." Perhaps the months of July and August were not included in the hot weather

of the latter provinces on account of certain climatic conditions, but at any rate it was necessary to explain the matter.

Dr. Fauvel replied that the difference was that in Bengal the maximum intensity of cholera commenced in April with the hot weather, and terminated with it in August, while in the North-Western Provinces the greatest epidemics had commenced with the termination of the hot weather and had continued till the commencement of winter.

Dr. Gomez said he had declared in Committee, and he declared again, that he did not, in respect of the influence of the seasons in the development of choleraic epidemics in India, altogether share the opinion expressed by the Committee. He would, however, vote for the conclusion of the chapter, but under reservation in regard to the part of the text in question.

Dr. Millingen believed that the extraordinary density of the population, rather than the pilgrimages, was, in India, the chief of the causes concurring to develop and propagate epidemics of cholera.

The text and conclusion of the second part of chapter VI. were adopted by a unanimous majority of 21. The Conference postponed to the next meeting the commencement of the discussion on the questions in the second group of the programme.

Dr. Bartoletti read a despatch which he had just received from Alexandria, and which contained most satisfactory news of the sanitary condition of Egypt, where there had not been a single further case of cholera.

Dr. Salem Bey proposed that, on the strength of this despatch, the Conference should express the wish to the Superior Council of Health that it (the Council) should again consider the question of the precautionary measures to be adopted against arrivals from Egypt.

Some members having observed that there was no occasion to express that wish, inasmuch as the Superior Council of Health would not fail to take up such an important question at its next meeting, the Conference rejected the proposition, which was voted for by Drs. Salem Bey and Sawas alone. The British Delegates requested that it should be recorded in the minutes that they had declined to vote upon the motion.

The meeting terminated at 5 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

Dated 22nd September 1866.

From—J. MURRAY, ESQ.,

To—*The Under-Secretary of State for India.*

I am directed by Lord Stanley to transmit to you, for such observations as Viscount Cranborne may have to offer thereupon, the accompanying copy of a Despatch* from the British Delegates, reporting the proceedings of the Cholera Conference at Constantinople, together with a copy of a Despatch† from Lord Lyons, pointing out the unfavorable results likely to ensue should the direction of sanitary measures in the Red Sea be entrusted to an International Commission.

* No. 32, September 10th.

† No. 336, September 12th.

No. 32, dated 10th September 1866.

From—MESSRS. E. GOODEVE and E. D. DICKSON.

To—LORD STANLEY, M. P.

We beg to report to your Lordship the proceedings of the Conference since our Despatch No. 31 of the 28th.

We then had the honor to inform your Lordship that the Conference had commenced the discussion on the report of the 3rd Committee on the 3rd group of the programme. This document, styled "Mesures a prendre en Orient," occupied six sittings, and was finally disposed of on the 8th instant.

The recommendations proposed were adopted in most instances unanimously, and in the remainder by a large majority.

The parts of the report which most concern England are—

Those regarding the extinction of cholera in India,

Those for preventing its exportation from India, and

Those for arresting its passage from India to Europe.

The last of these offers special interest, as it largely refers to the communications between India and the western world by the Red Sea route; to the measures applied to Indian Mahomedan pilgrims, and to communications with the Persian Gulf. On this

account we beg, in the first instance, to report the course we have pursued on the most important points of this section, *viz* :—

1.—The control of sanitary matters in the Red Sea by an international commission, sitting probably at Suez.

2.—The establishment of an intercepting station at Perim, for the purpose of interrogating and examining vessels when they enter the Red Sea, in order either to give them pratique or to assign them a quarantine station if necessary.

3.—The establishment of a lazaretto in the immediate neighbourhood of Perim chiefly for pilgrims; and another at Tor, at the foot of Mount Sinai, for ships bound to Suez.

4.—The course to be adopted towards the pilgrims in the event of cholera occurring in the Hedjaz.

5.—The plan affecting the freedom of passage through Egypt.

6.—The measures taken in the Persian Gulf.

We opposed the scheme of an internatoinal commission, thinking the present Egyptian administration fully competent to carry out the Committee's proposals, and believing, as suggested by the Dutch Delegate, M. Keun, that quarantine or restrictive measures directed against Mahomedan pilgrims by their own co-religionists would be more readily obeyed by them than if enforced directly by Christians.

In the matter of Perim, we merely stated that we could not say what might be the views of Her Majesty's Government on the subject, and Mr. Dickson suggested that Mocha might be equally suitable. We objected to the intercepting of vessels at Perim as not likely to be so efficacious as supposed by the Committee, owing to the facility with which small craft would elude the vigilance of the cruisers, and the possibility of cholera getting into the Hedjaz by land from other parts of Arabia.

With reference to the lazaretto at Bab-el-mandeb, we pointed out that, in addition to the doubts as to the safety of anchorage, there would be the danger of hostility from the natives in the neighbourhood, and the probability that a lazaretto could not be maintained there except under the protection of a fortress and of a strong garrison. On the whole, we preferred the island of Camaram for the interrogatory and quarantine when necessary of pilgrim ships. Several other localities for a lazaretto were suggested, and among them, Count Lallemand mentioned Obokh, the new French possession on the African coast near Tadjoora at the outside of the entrance of the Red Sea.

We objected to the intercepting of Suez-bound ships at Perim as a useless detention, and suggested that enquiry should be made as to the practicability and safety of establishing for them a less distant and inconvenient quarantine station than Tor.

We beg to solicit your Lordship's attention to the measures proposed for the Mecca pilgrims (section 7, pages 47,48) in the event of cholera breaking out in the Hedjaz during the pilgrimage. In this chapter, part of the phraseology of the "Mesures d'urgence" is adopted, but the measures are different from those proposed at the opening of the Conference. The western pilgrims will now be permitted to perform quarantine at El-Wesch, where ample supplies and accommodation are to be provided, and the Indian pilgrims will be allowed to depart freely. We agreed in the unanimous vote of the Conference which adopted this recommendation and also with the modification of a 15 days' detention instead of 10 days after the cessation of cholera among the pilgrims at El-Wesch.

The Committee suggested (section 8, pages 49-51) that, in the event of cholera invading Egypt from the Red Sea, all maritime communication between that country and the Mediterranean port should be temporarily interrupted, *i. e.*, during the whole duration of the epidemic, for at least three or four months. We opposed this measure: and, from the discussion which took place, we learned that the interruption was not to apply to mails, but only to passengers and merchandise—an exception which is not apparent in the report itself.

With exception of ourselves, the Conference declared itself most emphatically in favor of this measure. Dr. Monlau even went so far as to suggest *putting Egypt into quarantine every year* during the duration of the pilgrimage to Mecca; and this, *whether cholera was prevalent in either country or not.* This suggestion was not responded to. Two votes were taken on the question of interrupting the communication with Egypt,—one to accept the views of the Committee, which are drawn up interrogatively in the report; and the other to declare the answer of the Conference to those views,—a course which the Conference had not hitherto adopted, but which was proposed by the Spanish Delegates in order to give greater force to the opinions expressed; 16 voted for the first conclusion, and three against it, *viz.*, Salem Bey, Dr. Dickson, and Dr. Goodeve. Thirteen voted for the second conclusion; three against it, Salem Bey, Dr. Dickson, and Dr. Goodeve; and four abstained from voting, Salih Effendi, M. Keun, Dr. Millingen, and Dr. Gomez.

In the section on cholera travelling to Europe through Persia, the Committee contented itself with recommending that its course through the channel of the Persian Gulf should be met with application at its ports of ordinary restrictive measures (section 9, page 54). But on account of its frequent passage into Persia through the sea route, Dr. Millingen, supported by Dr. Gomez, proposed as an amendment that special measures should be applied similar to those proposed for the entrance of the Red Sea. In short, that all vessels arriving from India should be stopped at the mouth of the Persian Gulf, where a quarantine station would be established upon some island, such as Kishm or Ormus. The amendment gave rise to much discussion during two sittings, but it was not carried. We voted with the majority against the amendment.

With regard to the exportation of cholera from India, the Conference adopted the Committee's recommendation (section 5, pages 22-25) that vessels leaving India should be furnished with a bill of health delivered by competent medical authority, and of the invariable application of the modified rules of the British Indian Native Passenger Act of 1858 (annex B., page 73) not to pilgrim ships under British colors only, as at present, but to pilgrim vessels of all flags sailing from British and other Indian ports.

The Dutch Consul at Singapore has given an account, which will appear in the protocols, of the wretched condition of the pilgrims as to crowding and filth on board of Ottoman vessels leaving the port of Singapore,—a state of things with which it appears our regulations do not interfere. We joined in this vote.

The Conference also adopted the recommendation that pilgrims should in all cases be provided with a passport, deliverable only when the applicant gives proof that he has the means of defraying the expense of his journey to and from the Hedjaz, agreeably to the practice established by *law* in the Dutch Indian possessions (annex C. page 20).

Dr. Goodeve reserved his assent to this proposition, as he thought, that difficulties might arise in its application to British India, and because, from the showing of the Dutch Delegates themselves, it does not secure any real advantage to the pilgrims, owing to the exactional pillage to which they are exposed on their arrival in the Hedjaz, and which generally leaves them destitute, and compels them to go into debt for the return passage.

We refrain from troubling your Lordship with a statement of the objecton we raised to several minor points in the report, as these will appear in due course in the protocols. The report of the 2nd Committee on the 3rd group of the programme is not yet finished. It is hoped, however, that a portion of it may be ready for discussion on the 15th instant.

We have the honor to forward copies of protocols Nos. 18, 19 and 20, and copies of the report on "Mesures a prendre en Orient," which we were unable to send with our Despatch of the 28th ultimo.

Having received notice, through Mr. E. Malet, of the request of the India Office for six additional copies of the report sent with our Despatch No. 30, we think that probably copies of the report "surles mesures a prendre en Orient" will also be required, and therefore enclose six extra copies of it addressed to the India Office.

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 18 OF THE 18TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its eighteenth meeting at Galata-Serai, on the 18th June 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

The Hon. W. Stuart, Secretary to Her Britannic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands :

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Mirza Malkom Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d' Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway :

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey :

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Count de Noidans read a minute of the General Committee, showing that, on a proposition made by Count de Lallemand, the Committee had agreed to substitute for the words "*exclusive privilege*" (*see* the title of the 5th chapter of the 1st group of questions) the words "*exclusive property*."

M. Stenersen proposed to the honorable Conference that in future they should meet four times a week, *viz.*, on Mondays, Tuesdays, Thursdays, and Saturdays. His object was to hasten the progress of the numerous labors imposed on the Conference by the programme, which could not be brought to a termination unless the number of meetings was increased so as to gain time.

MM. Bartoletti and Fauvel remarked that the Council of Health in which many of the Delegates sat, met on Tuesdays.

M. Mühlig opposed M. Stenersen's proposition, because, in his opinion, they would rather lose than gain time, inasmuch as they would impede the labors of the Committees. The Conference, he said, instead of adding to the number of its meetings, ought to reduce them to two so as to afford time to the Committees to finish their work.

He proposed that the Saturday meetings should be dispensed with.

M. Fauvel, Professor Bosi, and other Delegates supported M. Mühlig's proposition, and set forth in greater detail the causes which made it necessary and opportune, by making the labors of the Committees and of the Conference harmonise.

M. Monlau also supported M. Mühlig's proposition, but only conditionally that the day of meeting for the Conference, which was proposed to be done away with, should be made an obligatory Committee day.

M. Segovia supported M. Stenersen's proposition: in his opinion it was the only one fitting for the Conference which had met with the object of working.

Dr. Goodeve would prefer the three meetings a week then held.

M. Bosi and Chevalier Pinto de Soveral asked that the word *obligatory* should be withdrawn: the Committees were at liberty to meet on Saturdays and all other days, and they would without doubt hold as many meetings as were necessary, but he thought the Conference had not the right to prescribe any obligatory meeting for them.

M. Segovia replied that it had the right to do so for the same reasons that it had fixed the number of days and meetings for itself.

Several Delegates protested against the word *obligatory*, though at the same time they agreed in the spirit of M. Monlau's proposition. On a declaration made by M. Stenersen that he withdrew his proposition, and on the opinion of several Delegates, H. E. the President put to the vote M. Mühlig's proposition fixing, until further orders, the number of meetings of the Conference at two (Mondays and Thursdays).

It was adopted by 18 against 4.

H. E. the President put to the vote M. Monlau's proposition, that it should be obligatory on the Committees to meet on Saturdays. The votes were equal—13 against 13.

H. E. the President having voted against the proposition, his casting vote caused the rejection of the proposition.

Those who voted against the proposition said they would have voted for it without the word *obligatory*. But all agreed that Saturday was to be left at the disposal of the Committees.

M. Fauvel then continued the reading of the general report. The discussion stopped at the end of the 1st group.

The 2nd group of questions, said M. Fauvel, commenced with the title *Transmissibility and propagation of cholera*.

M. Monlau made the following remarks on the subject :—

This chapter comprises two subjects, which it is very important should not be confounded. *Transmissibility*, which is only a property, should not be treated of at the same time as *propagation*, which is a fact. They are two very different things, in regard to which separate conclusions must be come to, methodised regularly. This is all the more necessary that in the report (it may be said parenthetically) the question is more of propagation, which has been deeply studied and well known for a long time, rather than of transmissibility, a fact which is, as it were, new, which it is necessary to study attentively, and to demonstrate by conclusive proofs. This is so true that Asiatic cholera had received the denomination of epidemic even when its transmissibility was not believed in. But at the present day it is not sufficient to call it epidemic ; it is necessary also to make it understood that it is transmissible, this transmissibility not being essential to every epidemic, it being well known that it is the property of epidemics to propagate themselves. But there are some which transmit themselves ; and amongst these latter has been classed at the present time epidemic cholera. To prove this, I adduce the choleraic epidemics which have occurred in Spain.

To proceed orderly and methodically, it would have been necessary to have commenced this chapter with transmissibility, to have properly considered it, and to have come to a special conclusion : after which the same thing should have been done with regard to propagation. In this chapter also there are, in my opinion, such formal assertions, that some sort of deduction must necessarily be drawn from them.

M. Fauvel replied that if the Conference adopted M. Monlau's views, instead of the order and method which it pretended to introduce into the 2nd group, it would admit that the greatest confusion should prevail. M. Fauvel confessed he did not understand M. Monlau's observations, and still less his attacks upon the group in question. That group, he said, had been discussed in full Committee, and adopted unanimously. M. Monlau had been present during the discussion, and

had voted for the adoption of both text and conclusion. What then could his opposition refer to? M. Fauvel believed there was a good and proper connexion between the chapters, and that they were orderly and logical. He would ask them to remark that in the report the first thing spoken of was transmissibility, and then its proofs were detailed and considered. Every thing, according to M. Fauvel, existed in logical order, and to every impartial person the facts set forth in the report showed a strict methodical connexion one with the other.

M. Monlau remarked to M. Fauvel that, in entering upon the revision of a general report, after one had had time to consider it, it was natural that there should be a change of opinion on several chapters and facts which one had not previously sufficiently looked into. And this day in opposing ideas which he had admitted before, he did no more than exercise the right of a Delegate called upon to take part in the discussion.

M. Stenersen thought that tolerance should be allowed to opinions that nobody should be placed under constraint, that everybody should be at liberty to give expression to his views, whatever they might be; and that in acting differently they would cause annoyance to those who had observations to put forward in regard to the report. He said that he also had objections to make, and he intended to act according to his convictions, and make free use of his right to speak.

M. Sawas supported M. Stenersen's observations. M. Bartoletti, as President, and M. Mühlig as Reporter of the Sub-Committee appointed to consider this question, spoke in support of the general report, which had resulted, they said, from frank and profound discussions, as well as from the special reports on the questions considered and discussed by the Committee.

M. Fauvel declared that he in no way disputed the right of speaking and making objections, but he said it was necessary, nevertheless, to be consistent, and to respect the opinions which had been expressed upon a subject which had been examined and discussed.

On M. Bosi's proposition, H. E. the President put to the vote the text of the 8th chapter as it stood.

Drs. Goodeve and Dickson entered a reservation in regard to the epidemic of 1865. They did not maintain the opinion laid down in the report, *viz.*, that it had been proved that the epidemic of 1865 was imported by pilgrims coming from India.

The text, as it stood, was adopted by a majority of 20 against one M. Monlau, who declined to vote.

Voted for the text:—MM. Polak, Sotto, de Noidnas, Spadaro, Count de Lallemand, Fauvel, Kalergi, Maccas, Vernoni, Bosi, Van Geuns Millingen, Sawas, de Krause, Lenz, Bykow, Stenersen, Baron Hübsch Bartoletti, His Excellency Salih Effendi (20).

H. E. the President then put the conclusion of the same chapter to the vote.

It was adopted by a majority of 22 votes, none voting against it, and one abstaining, M. Moulau.

All those just named voted, in addition to MM. Segovia and Malkom Khan.

M. Fauvel proceeded to the 2nd article of the 8th chapter, entitled "Proofs from facts establishing the propagation of cholera by importation."

M. Maccas desired that among the importations mentioned in that paragraph, those of Greece should also be included, because Greece had been able to afford, as he had taken care to point out in Committee, signal proofs in favor of the importability of cholera.

They were proofs, continued M. Maccas, which had encouraged Greece in the last epidemic to vigorously maintain its quarantine system; and as everybody knew, with the greatest success. The same system in the two previous epidemics had saved Greece from the ravages of the scourge. In the great epidemics of 1830 and 1837 she escaped the danger to which all Europe was exposed, as also in the epidemic of 1848. In the first of these epidemics the disease did not show itself in any part of Greece, and in the second (1848) the disease declared itself only in the island of Sciathos, and then only on account of a violation of quarantine, as was proved afterwards. The disease, however, died away in the island, without spreading to any other part of Greece.

In 1854, continued M. Maccas, cholera was imported into Greece by the French mail-steamers from Marseilles (July 14.) It had been found possible to follow up the successive *importation* of the disease in that epidemic in the most conclusive manner.

Lastly, in 1865, the disease was imported into the lazarettos of Delos and Sciathos by ships from Smyrna, Alexandria, and other places where cholera existed.

M. Mühlig, taking into consideration the request made by M. Maccas, stated that all the importations briefly mentioned in the general report had been extracted from the report of the Sub-Committee, where they were inserted *in extenso*. M. Mühlig considered that the importations mentioned by M. Maccas were so important, that they should be added to the general report in detail.

M. Fauvel observed that the general report made mention in several places of the importations of cholera into Greece. The epidemic of 1865 only was not reported, because it ought to be included in M. Bartoletti's report upon the last epidemic.

Acting on the opinion of several Delegates, H. E. the President asked the Conference to divide upon the text of the 2nd group, 8th chapter.

The text was adopted as it stood by a majority of 21, none voting contra, and 5 declining to vote.

Voted for:—MM. Polak, Sotto, de Noidans, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Maccas, Vernoni, Bosi, Van Geuns, Millingen,

de Krause, Mühlig, Lenz, Bykow, Hübsch, Stenersen, Bartoletti, and H. E. Salih Effendi.

Declined to vote:—MM. Segovia, Monlau, Malkom Khan, Sawas, Gomez.

H. E. the President put the conclusion of chapter 8 to the vote. It was adopted unanimously, (as above).

The paragraph commencing with the words "*Are there conclusive facts?*" &c., was then put to the vote.

It was adopted unanimously, (as above.)

The paragraph bearing the heading "*How is importation effected?*"&c. was similarly adopted.

Chapter 11, entitled "*Under what conditions does man import cholera?*" was also adopted unanimously; the votes in favor of it being those mentioned above, except MM. Monlau, Kalergi, and de Soveral, who were absent during the division.

Chapter 12 was also unanimously adopted, except by M. Millingen, who supported a fact mentioned by M. Michel Levy regarding the Varna epidemic of 1854 during the Crimean war. The very important fact mentioned by that author, said M. Millingen, contradicted the opinion expressed in the paragraph coming immediately after the conclusion in which it was said that there was nothing to prove to the Committee that individuals leaving a choleraic focus, and apparently enjoying on their arrival in an uninfected locality perfect health, could, *per se*, have imported the disease. He (M. Millingen) thought that the Varna matter mentioned by M. Levy, evidently proved it.

M. Fauvel believed that that fact proved the very opposite of what M. Millingen thought, because the disease was not imported into Varna, although, during the course of the voyage, which lasted for seventy days, between Marseilles and Varna, the ship had touched at several places where cholera was raging.

Chapter 12 and its conclusion were adopted as above, except by M. Millingen.

MM. Monlau, Kalergi, and Chevalier de Soveral were absent during the division.

Chapter 13 was next discussed.

M. Mühlig asked that the second part of its conclusion should be modified as follows:—"All the facts mentioned regarding a longer incubation refer to cases which are not conclusive, either because the premonitory diarrhœa was included in the period of incubation, or because the infection may have taken place after the departure of the individual from an infected locality."

It was an error in the wording, said M. Mühlig, but it was important, for it served to explain the first part of the conclusion, where it was said that premonitory diarrhœa or confirmed cholera always appeared within a few days after the departure.

Dr. Goodeve asked for the rectification of the phrase in the beginning of page 36 (line 6):—"*Extracted from an official document written by Dr. Goodeve,*" which should be "*written by Mr. Rutherford, Inspector-General of the Army at Gibraltar.*"

M. Sawas remarked that the expression made use of in the conclusion "*does not exceed a few days*" was too vague and not sufficiently scientific. M. Sawas would wish it to be said candidly that the time was not known, and that there were no data by which it could be fixed; "some days," he thought, might mean two, or eight, or ten or more. Now a scientific report should be more precise than that.

M. de Lallemand said that the ordinary estimation of that familiar expression was equivalent to a lapse of two or three days, never more than ten.

M. Fauvel said that that evidently appeared from the text.

M. Monlau said that the text, as it stood, might be accepted, for further on, in treating of the question of quarantines, occasion would be taken to specify the period.

H. E. the President, on the motion of M. Fauvel, who said he supported M. Mühlig's proposed amendment, and after listening to some remarks by MM. Millingen, Salem Bey, and Count de Lallemand, for and against the amendment, put the text of chapter 13 to the vote. It was adopted by a majority of 21 votes, none against, and 3 who declined to vote, MM Millingen, Malkom Khan, and Sawas.

Votes for :—MM. Polak, Sotto, Count de Noidans, Spadaro, Count de Lallemand, Fauvel, Goodeve, Dickson Kalergi, Maccas, Vernoni, Bosi, Van Geuns, de Krause, Mühlig, Lenz, Bykow, Baron Hübsch, Stenersen, Bartoletti, and H. E. Salih Effendi (21).

The President then put the conclusion to the vote, together with M. Mühlig's amendment.

It was adopted by a majority of 20 against 1, and 3 who declined to vote, *viz.*, MM. Millingen, Malkom Khan, and Sawas.

All those above mentioned were included in the majority, except M. Bartoletti, who gave up his vote to Salem Bey, who voted against the amendment and conclusion proposed by M. Mühlig.

M. Fauvel passed on to chapter 14, headed "*Can cholera be imported and transmitted by living animals?*"

M. Lenz explained his reason for voting against this chapter. His reason was contained, he said, in the very conclusion of the chapter, which said "There is no known fact to prove that cholera has been imported by living animals." This negative experience given by the three great epidemics should, in his opinion, have outweighed all theoretical reasoning.

M. Bykow said he had voted against the text and conclusion of Chapter 14, because the absence of facts demonstrating the transmission of cholera by living animals proved, in his opinion, that the outer

covering of a living animal could not be impregnated with the choleraic germ and retain it for a certain time, and that consequently animals should not be regarded as susceptible.

Dr. Goodeve desired the suppression of the last part of the conclusion from the words " but it is reasonable, nevertheless," &c.

Dr. Dickson and Salem Bey concurred with Dr Goodeve.

MM. Van Geuns and Stenersen, after endeavoring to show the existence of a contradiction between the first and the last part of the conclusion, said they concurred in the request made by Dr. Goodeve.

Count de Lallemand remarked that the Committee did not mean all animals without distinction, but rather some, and, in certain cases, it did not consider that they were covered with certain matter capable of impregnation with, and the tranmission of, the choleraic principle. If the Committee had not drawn up the last part of his conclusion, it would have allowed it to be believed that animals could never become the agents of transmission.

M. Segovia remarked that, judging from what was the practice in many lazafettos, and he mentioned as an instance that of Malta where he had been an eye-witness, it was proved that animals were there considered to be capable of transmitting cholera.

Dr. Dickson brought to notice a contradiction between the text and the conclusion. In the text, he said, living animals were spoken of while in the conclusion they were, so to speak, catalogued and included amongst merchandise or articles said to be susceptible.

M. Fauvel gave some explanations regarding this chapter. These explanations, he thought, were necessary for those who had not attended the meetings of the Committee and who consequently were ignorant of the view taken by the Committee in the draft of the chapter under discussion.

The Committee, said M. Fauvel, had looked at animals from two different points of view :—In the *first* place, it took them into consideration in view to ascertain whether they could contract cholera ; *secondly*, to ascerain whether they could transmit it. The Committee had stated distinctly that animals could not contract cholera, but at the same time it stated that, by means of their covering, they might become the receptacles of the choleraic principle, and consequently capable of transmitting it.

If a flock of sheep, said M. Fauvel, came into contact with persons affected with cholera, it was evident that their wool, impregnated with the disease, might communicate it to man. In such a case, he would ask whether these sheep could be regarded as susceptible, and whether it would be prudent to adopt no sort of sanitary measure in regard to them.

Dr. Dickson said he was satisfied.

M. Sawas said that much stress should not be laid on the absence of facts. In his opinion, facts were not wanting, only they had

not been carefully considered and recorded, because, until within a short time past, the transmissibility of cholera was not believed in but the contrary. At the present day, however, thanks to the labors of German physicians, science had awakened and was actively pursuing researches of that nature, and she would soon be rich in facts.

M. Bykow refuted the opinion of M. Sawas. He said that in Russia, since the epidemic of 1830 and 1831, physicians had commenced to believe that cholera, *par excellence*, was transmissible. And at the same period the Government had commenced to put very severe measures of quarantine into execution.

M. Sawas said he was aware of the fact mentioned by M. Bykow, as well as of other similar facts. They did not, however, invalidate, in his opinion, what he had just said about the absence of facts. Until within a short period, the great majority of physicians consisted of "anti-contagionists," and then, of course, measures of quarantine were optional with Governments. At the present day the opinion of the minority was tending to become that of all, and science consequently followed up her researches in the same sense.

M. Maccas said that this question having been raised by him in Committee with the object of drawing the attention of the Conference to a point which, in his opinion, was intimately connected with the prophylactic measures which it was called upon to adopt, he believed himself in duty bound, now that the question was under discussion by the full Conference, to say a few words in order to make his views more clearly understood.

It was necessary to come to a decision upon two points, *viz*:—

1*st*.—Whether animals were liable to contract cholera during an epidemic, and whether they could transmit it in the same way as men?

2*nd*.—Whether these same animals, conveyed to an uninfected locality, could sometimes import the disease into and spread it through that locality?

He (M. Maccas) had been the first to declare that the disease which animals might by experiments be made to contract, or those which might attack them during an epidemic of cholera, were far from being identical with the cholera of man, and that, in order categorically to solve the question whether animals were liable to contract cholera, science stood in need of more detailed and more precise studies, and of numerous and conclusive experiments. His (M. Maccas's) opinion had been unanimously adopted by the Committee.

But the doubt, continued M. Maccas, was very much greater still in connexion with the hypothesis that animals, even supposing them to possess a species of cholera peculiar to themselves, were able to transmit the true cholera to man. So much for the first part of the question.

As for the second head, which for a moment it was thought should be included in the question of merchandise, but which it had preferred to treat separately, because the transport of one or several animals

was not always a matter of trade, the Committee deemed it its duty to prove that animals might become the carriers of the choleraic germ for a time, probably a short time, as was now admitted in respect of other objects. Well, these proofs, so far as the Committee was concerned, had no existence, he confessed ; but he added that that did not exclude the possibility that facts of that nature might sometimes have occurred. The Committee could express itself only in a *dubious* way in regard to the fact of the choleraic impregnation of animals, and admit the possibility of their becoming in certain cases so-called susceptible objects. If it were properly considered that even quite recently, and perhaps at the present day even, some persons considered that men in whom cholera had not become clearly confirmed, were not dangerous ; if it were also considered that the facts relative to the importation of cholera by personal effects were very few in number : then only could the reasons be understood which had determined the Committee in classing living animals among so-called susceptible agents, notwithstanding the insufficiency of facts relating to the subject. Reserve on this head, added M. Maccas, was necessary until the day when experience should demonstrate the contrary, and this was why he altogether approved of the decree of the International Sanitary Conference of Paris of 1857, which, in Article 30, expressed itself in the following terms :—

"In all cases of foul bills of health, merchandise of the third class shall be exempted from all measures of quarantine, and immediate delivery of such merchandise may always be given under the supervision of the sanitary authorities ; except living animals, which shall be subjected to the quarantines and purifications in use in every country respectively."

M. Millingen was of opinion that the conclusion of chapter 14 was not logical, for it could not be said "We know nothing about the question, and yet we draw conclusions." He proposed the elision of the word *rational*, and the substitution for it of the word *prudent*. Then, he thought, it would be necessary to frame several classes of animals, so that a bullock, a horse, and a flock of sheep might not be placed in the same class. This matter, he thought, was of essential importance to the question.

Salem Bey remarked that wearing apparel had been regarded as susceptible because it was kept shut up, whereas living animals existed in the open air. He thought it was necessary to strike out the second part of the conclusion.

In compliance with the request of several Delegates, H. E. the President put the text of chapter 14 to the vote.

It was adopted by 19 to 4.

For :—MM. Sotto, Count de Noidans, Segovia, Moulau, Spadaro, Count de Lallemand, Fauvel, Kalergi, Goodeve, Dickson, Maccas, Vernoni, Bosi, Sawas, Gomez, de Krause, Mühlig, Baron Hübsch, Stenersen (19).

Against :—MM. Van Geuns, Lenz, Bykow, Salem Bey.

In compliance with the proposal of several Delegates, who requested that the conclusion should be divided into two parts, H. E. the President put the first part to the vote, as far as the words "*by living animals*" (inclusive).

It was adopted unanimously.

For:—MM. Sotto, Polak, de Noidans, Segovia, Monlau, Spadaro, de Lallemand, Fauvel, Kalergi, Maccas, Bosi, Vernoni, Goodeve, Dickson, Malkom Khan, Sawas, Millingen, Van Geuns, Gomez, de Krause, Mühlig, Lenz, Bykow, Baron Hübsch, Stenersen, Salem Bey, H. E. Salih Effendi.

His Excellency then put to the vote the 2nd part of the conclusion, commencing with the words "*but it is rational,*" &c.

It was adopted by a majority of 16 to 8. Three Delegates declined to vote.

For:—MM. Sotto, Count de Noidans, Segovia, Monlau, Spadaro, Count de Lallemand, Fauvel, Kalergi, Maccas, Bosi, Vernoni, Sawas, Gomez, de Krause, Mühlig, Bartoletti (16).

Against:—MM. Goodeve, Dickson, Van Geuns, Millingen, Lenz, Bykow, Stenersen, Salem Bey (8).

Declined to vote:—MM. Polak, Mirza Malkom Khan, Baron Hübsch (3).

The conference appointed Wednesday next, 1 P. M., for its next meeting, Thursday being the anniversary of His Majesty the Shah of Persia, which would prevent the attendance of several Delegates at the meeting, if it were to be held on Thursday as usual.

The meeting terminated at 5-30 P. M.

Order of the day for the next meeting:—

1*st.*—Continuation of the discussion on the general report.

2*nd.*—Miscellaneous communications.

SALIH,
President of the Sanitary Conference.

DR. NARANZI,
BARON DE COLLONGUE, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 19, OF THE 20TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its nineteenth meeting on the 20th June 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d' Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For France:

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia :

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

For Russia :

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway :

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey :

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt :)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at 1 P. M.

Baron de Collongue read the minutes of the 17th meeting.

Dr. Millingen asked leave to speak, after the minutes had been adopted, in order to read the two following passages, extracted from the work of Rigler (vol. ii., pp., 441-443), confirming the correctness of the details he had given at the last meeting but one, in regard to the importation of cholera into the Hedjaz in May and again in November 1846 :— " In the month of May 1846, cholera showed itself at Aden, Mocha, and Jeddah, and invaded almost the whole of the seaboard of the Arabian peninsula : it even penetrated into the interior of Yemen. However it spared the opposite coasts of the Red Sea and did not even touch Mecca, which is not far from Jeddah. Towards the end

of June the disease had almost entirely ceased in those countries. Later, towards the end of November, cholera showed itself at Medina as well as at Mecca. In the latter town, 15,000 victims were reckoned in a population estimated, at that period, on account of the pilgrimage, at 100,000 souls. Those who suffered most were the pilgrims from Syria, Egypt, Tunis, and Morocco; the Constantinople caravan lost notably several personages of high distinction."

Dr. Naranzi read the minutes of the 18th meeting.

The Conference adopted the minutes, and then, on its being remarked by H. E. Salih Effendi that it would be impossible to meet on Monday the 25th, by reason of that day being the anniversary of the accession to the throne of H. I. M. the Sultan, the next meeting was fixed for Wednesday, the 27th June, at 1 P. M.

The discussion on the report of the General Committee being resumed, Dr. Fauvel read the question and the conclusion of chapter XV.

M. Stenersen expressed in the first instance his regret that in treating of the great question of the transmission of cholera by choleraic arrivals generally, the Committee should have limited itself to speaking of transmission by living animals, by articles of domestic and personal use, and by merchandise, without at the same time throwing any light upon the grave questions of transmission by means of provisions and ships. The Committees appointed to consider preservative measures ought nevertheless to have their position in this respect properly defined, and if medical science was not in a position to form any clear, well-defined, and final opinion upon the point, the report should at any rate say so. In regard to matters especially touching upon the chapter under discussion, M. Stenersen said he thought that the manner in which the conclusion was deduced from the facts upon which it was based was defective. The Committee brought forward eight facts. Now it was evident that the first seven only related to cases where the disease had been communicated by articles which had come into direct contact with choleraic patients or their *excreta*. In regard to the eighth, it might also very well be considered as an instance of prolonged incubation rather than as a proof of the transmissibility of the disease by means of infected articles. Supposing, however, that it were to be so interpreted, would it not then become reasonably necessary to admit that articles contained in the trunks of emigrants had been in direct contact with persons affected with cholera? Otherwise, and if this contact had not existed, how was it to be explained that the clothes worn by emigrants, clothes which had remained in the same choleraic focus as the articles contained in the trunks, had not become at the same time impregnated with the morbific germ, and that they had not, therefore, communicated the disease? If this fact, as well as the seven others, only proved the possibility of transmission by means of articles which had been in contact with choleraic patients, how was it that the Committee could decide as to the possibility of that transmission in general?

M. Stenersen also noticed some obscurity and even a contradiction in the paragraph commencing thus :—"*But in regard to the well-proven* possibility," &c. The Committee commenced by establishing the theory of transmissibility by articles in general, and then immediately afterwards it discovered a limitation to the theory, applying to the generality of cases, a limitation which gave rise in the next succeeding paragraph to an examination of the conditions, "*happily rare*," which were necessary in order to endue articles of common use with a susceptibility for the importation and transmission of cholera. The result of this examination was indicated further on :—"*It follows from all this that articles of common use owe the property of transmitting cholera to their capacity for impregnation with matter proceeding from choleraic patients.*" The Committee was correct there : it advanced nothing which it had not proved. Nevertheless, some lines further on, and this time, in the conclusion, it was seen to declare *de novo* that the theory of transmission by articles in general was proven.

M. Stenersen said he did not contest the theory in itself : but he simply opposed the mode of argument of the Committee, which appeared to him to be illogical. If the Committee believed in transmission by means of articles generally, it should prove it by facts. If it had no conclusive facts to adduce, it should abandon the theory, or, at any rate, place it among those obscure questions which science was not as yet in a position to solve. M. Stenersen finally proposed :—1*st*, that in the paragraph commencing "*But in regard to*," &c., the words "*and especially by those*" should be struck out ; and similarly, in the conclusion, he proposed the elimination of the words "*especially by those.*" 2*nd*, that the following sentence should be added to the conclusion :—"With "respect to articles coming from an infected locality without having "been in contact with choleraic patients, the Committee believes it is "prudent to regard them as dangerous."

Dr. Monlau mentioned two facts which supported the conclusion at which the Committee had arrived :—1*st*, cholera was imported into Galazzita, near Salonica, by two persons who had picked up a cloak which had been thrown away, the property of one who had died of cholera at the lazaretto ; 2*nd*, at Avila, in Spain, the importation of cholera was attributed to a soldier who had purchased clothing when passing through Madrid where cholera prevailed. The disease broke out in a house where, on arriving at Avila, the soldier put out the clothes to dry, as they had been wet with rain during the journey.

Dr. Monlau added that it was a matter of fact that the transmission of cholera by means of articles of common use soon ceased, and that it had rarely been seen to give rise to a real epidemic. This observation appeared to him to impart a certain amount of value to the distinction which had formerly been established between the *contagium vivum*, or that resulting directly from the sick person, and the *contagium mortuum* or that resulting from articles belonging to the sick person. Dr. Monlau would ask whether there were not certain modifications to be effected in the terms of the passage which treated of the results of the dispersion to a

great number of points of travellers starting with their baggage from a choleraic focus. If it had to be admitted that, in the immense majority of cases, this baggage had not transmitted the disease, might not the same be said also of the travellers to whom the baggage belonged: and, in that case, might not a sort of argument against transmissibility by man be found in the passage as it had been drawn up?

Dr. Sawas, in reply to M. Stenersen, remarked that if transmission by means of articles of use could not be proved by facts except when there had been direct contact, it was none the less evident that it ought to be logically admitted that such articles, by reason simply of their having come from a choleraic focus, might transmit the disease. Why, for instance, should not clothes which had remained in the room of a cholera patient, not become impregnated with that choleraic germ, the nature of which was as yet unknown, simply by the fact of their being there and without any necessity for direct contact with the patient himself? Dr. Sawas, who was a member of the Sub-Committee appointed to consider this portion of the programme, explained that he was giving expression to his own personal ideas only, not the opinions of the Committee.

Dr. Mühlig remarked that when cholera had been transmitted by articles of personal use, in the majority of instances it was impossible to discover whether they had or had not been made use of by cholera patients. It was for this reason that the Committee had thought it right to frame a general conclusion.

Dr. Maccas thought that Dr. Sawas had gone a little too far in suspecting articles which had merely been kept in a choleraic focus. Did the germ of the disease then exist in the air? It would be better, he thought, to remain in doubt with regard to this class of articles. Nevertheless the distinction between articles of common use accordingly as they had or had not been in contact with choleraic patients was impossible in theory, and the Committee could not conclude otherwise than as it had done. It limited itself to admitting the possibility in the first case ("*may be imported,*") so as not to pronounce more affirmatively in the second: "*and especially.*"

Dr. Sawas believed that the extent and bearing of the conclusion could not be restricted without danger. Could it be guaranteed that articles proceeding from a choleraic focus could not communicate the disease merely because they had not come into direct contact with persons affected with cholera?

M. Stenersen admitted the justice of these remarks, and repeated that he did not ask for the modification of the conclusion, for that might really be attended with danger. It was merely necessary to justify the conclusion by logical argument. What he opposed was the mode of arguing adopted by the Committee, not the conclusion itself.

Dr. Lenz concurred in the remarks made by M. Stenersen. The facts quoted in the report in no way proved that cholera was transmissible by any other articles than those which had been made use of

by cholera patients. As the matter in hand related, not to measures to be adopted against such articles, but only to the setting up of a scientific theory, it would be well, in order to impart precision to the theory, to modify the conclusion of the chapter under discussion, namely, to enunciate only what was proved in the substance of the chapter. It would be necessary to eliminate the words "*and especially by those*" in the conclusion.

Dr. Sawas objected to this, saying that in the report all the facts and conclusions dovetailed into each other. For instance, the conclusion of chapter XXX, *viz.*—"*The atmosphere is the chief vehicle of the generating principle of cholera,*" to which they would come further on, to a certain extent supported that of chapter XV, as also what he had said himself of the possibility of contamination by articles which had merely remained in a choleraic focus. The argument of chapter XV might be modified, but its conclusion could not be touched.

Professor Van Geuns believed that M. Stenersen had not made sufficient account of the difference existing between the consequences drawn from *facts* and the *logical conclusions* deduced from general principles. It was very difficult to find conclusive facts admitting of no objection, and yet the great mass of known facts led the Committee to the conclusion that cholera had in many instances been transmitted by articles used by cholera patients. With this *quasi* certainty, it was necessary to consider what was logically possible, and it was for this reason that the Committee had been obliged to admit that it was possible even that articles in general coming from a choleraic focus might become agents of transmission.

Dr. Fauvel, as the reporter, asked to be allowed to remark that it was always difficult in every case, and even with regard to questions on which all were agreed, to come across facts which admitted of but one mode of interpretation. With respect to the question of transmission by articles of common use, there were not, it was true, any conclusive facts except as applicable to articles used by individuals affected with cholera. But besides these conclusive and demonstrated facts, there were probable facts, such as that of the importation of cholera into the family at Lurtheim, near Munich, as also that about the emigrants. In these two cases, it was impossible to prove that the things which had transmitted the disease had been used by cholera patients; it was only probable. Now what did the Committee say? and could it be accused of going beyond facts? It did not pretend that every article of common use coming from an infected locality transmitted the disease: it contented itself with saying:—"Cholera may be transmitted by these articles," and if it added "*and especially by those which have been made use of,*" &c., it was precisely because in the latter case conclusive facts existed. If, on the other hand, it could not be proved that cholera could be transmitted by articles which had not come into direct contact with choleraic sufferers, could it be proved either that only articles made use of by cholera patients could transmit the disease? In reply to the remarks made by Dr. Monlau, Dr. Fauvel explained that what the report said in regard to

articles of common use which, on the majority of cases and though proceeding from choleraic focus, nevertheless did not import the disease, applied also to man. It was evident that man was one of the chief agents of the transmission of the disease, and yet its transmission by him was only exceptional. If it were otherwise, would they not see masses of emigrants, scattered and put to flight by cholera, propagate the disease far and wide? What was true of man, was also true of articles of common use. If the one and the other, when they proceeded from a choleraic focus, did not necessarily and perforce communicate the disease they were not the less always dangerous. Certain conditions, moreover were necessary for the existence of this danger in regard to articles. These conditions were indicated by the Committee. They were, in regard to transport to a small distance, that the articles should have recently been in direct or indirect contact with cholera patients, and especially that they should have been soiled by their *excreta*; and, in regard to transport to a great distance, that they should have been shut up and confined.

Dr. Fauvel, in conclusion, expressed his opinion that the conclusion of the report was a logical deduction from facts; and that the Committee without forming any theory, had deduced from facts all that could be deduced from them when it framed a general conclusion based upon probabilities.

The President called for a division, 1*st*, upon the text of chapter XV, 2*nd*, upon the conclusion.

The text was adopted by a majority of 19 against one, and five who declined to vote. *For*:—Dr. Polak, Dr. Sotto, Count de Noidans, Dr. Fauvel, Dr. Goodeve, Dr. Dickson, M. Kalergi, Dr. Maccas, M. Vernoni, Professor Bosi, Professor Van Geuns, Dr. Gomez, M. de Krause, Dr. Mühlig, Dr. Lenz, Dr. Bykow, Dr. Baron Hübsch, H. E. Salih Effendi, Dr. Bartoletti. *Against*:—M. Stenersen. *Declined to vote*:—MM. Segovia, Dr. Monlau, M. Keun, Mirza Malkom Khan, Dr. Sawas. The conclusion was also adopted by 21 against two, and two who declined to vote. *For*:—Dr. Polak, Dr. Sotto, Count de Noidans, M. Segovia, Dr. Monlau, Dr. Fauvel, Dr. Goodeve, M. Kalergi, Dr. Maccas, M. Vernoni, Professor Bosi, Professor Van Geuns, Mirza Malkom Khan, Dr. Sawas, Dr. Gomez, M. de Krause, Dr. Mühlig, Dr. Bykow, Dr. Baron Hübsch, H. E. Salih Effendi, Dr. Bartoletti. *Against*:—Dr. Dickson, M. Stenersen. *Declined to vote*:—M. Keun and Dr. Lenz.

After the voting had concluded, Dr. Fauvel read the question and the double conclusion of chapter XVI.

M. Stenersen expressed his surprise at the report passing so rapidly over such a very important question as that of the transmission of cholera by merchandise. Not a proof, not an argument was adduced in support of the conclusion, which was preceded by only a few introductory sentences, in which the Committee confined itself to noting the entire absence of facts demonstrating the possibility of the transmission. This mode of procedure, it appeared to him, was all the

more to be regretted that a question was treated of in regard to which public opinion had long been occupied in every country, and that the Conference especially ought, therefore, to make it a point to throw light upon it and consider it thoroughly. It might be that the facts with which science was acquainted were not conclusive either one way or the other, but the report, for all that, should at any rate record all or a part of these facts, so that the Conference might examine them for itself and so convince itself of the impossibility, in the existing state of knowledge, of giving expression to the opinion which might reasonably be expected from it. There was a pretty unanimous admission that certain merchandise was not susceptible of transmitting cholera, and that amongst that which ought to be regarded as dangerous all kinds were not so to the same extent. If the Committee could do no more, it ought at least to have regarded the question in this point of view and to have shown what was substantial and well-founded in the distinction which had been generally established, between merchandise of different sorts. It should have noted, for instance, what should be thought of provisions in general, or at any rate of those which formed a somewhat considerable export trade, in so far as they were agents in the transmission of cholera.

Dr. Polak explained that he had voted against the first part of the conclusion because no fact whatever appeared to him to demonstrate the transmissibility of cholera by merchandise. He did not even believe in the possibility of such transmission, because choleraic patients being incapacitated for work, it was only altogether exceptionally and for a very short time that any traces of them could remain and that merchandise could come into direct contact with them. If the Committee, in coming to the conclusion it had adopted, had rags in view, it should then have classified merchandise in the first instance before adopting any conclusion.

Dr. Lenz also said he did not believe in the possibility of transmission by merchandise. In his opinion, the choleraic principle existed only in choleraic *excreta*, and it could not, therefore, enter into merchandise which was preserved by its mode of packing. The absence of facts to be adduced in support of this transmission only confirmed Dr. Lenz in the views he held.

Dr. Bykow said he would vote on the same side as Dr. Lenz and for the same reasons, and then added that a special Commission had been appointed at St. Petersburg in 1830 to consider this question. The enquiry which it held had afforded only negative results.

Professor Bosi objected that if there were no facts proving the transmissibility of cholera by merchandise, there were also none proving the contrary. Good sense indicated that, until proof to the contrary, certain merchandise should be regarded as dangerous.

M. Segovia, while he said he would vote for the chapter, also said he believed that it would have been well to have treated the question in greater detail, and that, at any rate, merchandise should never be

spoken of without specifying it according to its different sorts, the manner in which the different sorts were packed and conveyed, and all the circumstances which rendered some of them so different from others. Every article, whatever its nature might be, might become an object of traffic or commerce, become merchandise in fact, and it would be rash therefore to lay it down as a general and absolute rule that merchandise, as such, could or could not propagate cholera.

Dr. Pelikan explained the reasons which had led him to vote against the 1st part of the conclusion of the chapter under discussion, and to refrain from voting in regard to the second. It appeared to him desirable that so grave a question should be examined more in detail and with greater precision, not only in regard to the mode of contamination, but also with respect to the sanitary regulations at present in force in various countries. The draft Convention prepared by the Paris Sanitary Conference of 1859 separated merchandise into three classes, according to susceptibility, and he thought it would have been well to have considered the question in the same way.

Professor Van Geuns had also voted against the first part of the conclusion. Since there were no facts in proof of transmission by merchandise, the Committee could not decide on the possibility of such transmission without placing itself in contradiction with experience. He believed that if such a course were adopted, results would be reached which would render all commerce impossible.

Dr. Monlau thought that the conclusion, which appeared to him to be as restricted as possible, should be adopted. The present discussion, *viz.*, the consideration of the adoption of a classification of merchandise according to nature, condition, and mode of packing, would be more appropriate when preservative measures would be discussed.

Dr. Mühlig observed that the report affirmed nothing. Could it be denied that the transmission of cholera was possible by means of merchandise proceeding from a choleraic focus, when the same possibility had been admitted *quoad* articles of common use? Should not that which was true of one also be true of the other?

Dr. Millingen spoke to the same effect.

Dr. Fauvel, in reply to the various objections which had been urged against the chapter under discussion, remarked, in the first place, that the absence of facts to adduce was the best reason that could be given for its brevity. What could usefully be added to it, when there was nothing more to say? And because the Committee decided on the transmissibility of cholera notwithstanding the absence of proof, did it follow that it contradicted itself? Was not every one unanimous in admitting that certain merchandise was capable of propagating the disease? To adduce only one instance, were not rags considered as redoubtable agents of transmission, and had not the sanitary authorities of Marseilles prescribed special measures of precaution to guard against the danger arising from the enormous quantities of rags exported from Constantinople after the last epidemic? Regret also had been expressed

that chapter XVI did not contain a classified list of the various kinds of merchandise, according as they were more or less dangerous, but, as had been said, occasion would be taken later to consider the question.

A great number of members insisting on a division, Dr. Maccas, who had asked leave to speak, withdrew his request, saying that he gave up his right to speak if the Conference thought it had heard enough of the subject.

The text and the conclusion of the first part of chapter XVI were then put to the vote and adopted by 16 against five and three abstentions. *For*:—MM. Dr. Sotto, Segovia, Dr. Monlau, Dr. Fauvel, Dr. Dickson, Kalergi, Dr. Maccas, Professor Bosi, Dr. Salvatori, Keun, Dr. Sawas, Dr. Gomez, de Krause, Dr. Mühlig, H. E. Salih Effendi, and Dr. Bartoletti. *Against*:—MM. Dr. Polak, Dr. Goedeve, Dr. Lenz, Dr. Bykow, and Stenersen. *Declined to vote*:—MM. Professor Van Geuns, Mirza Malkom Khan, Dr. Baron Hübsch.

The text and conclusion of the 2nd part were also adopted by 14 votes. M. Stenersen, who had desired that the discussion on this part of the chapter should be continued, protested against the vote. Some other members declined to vote for the same reason. *For*:—MM. Dr. Sotto, Segovia, Dr. Monlau, Dr. Fauvel, Dr. Dickson, Kalergi, Dr. Maccas, Professor Bosi, Dr. Salvatori, de Krause, Dr. Mühlig, Dr. Baron Hübsch, H. E. Salih Effendi, and Dr. Bartoletti. *Declined to vote*:—MM. Dr. Polak, Dr. Goodeve, Keun, Professor Van Geuns, Mirza Malkom Khan, Dr. Sawas, Dr. Gomez, Dr. Lenz, Dr. Bykow.

The meeting terminated at 5 P. M.

SALIH,
President of the Sanitary Conference.

DR. NARANZI,
BARON DE COLLONGUE, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 20 OF THE 27TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its twentieth meeting at 1 P. M. of the 27th June 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

For Spain :

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States :

Dr. Ignace Spadaro.

For France :

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain :

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece :

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy :

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands :

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia :

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Baron de Collongue, one of the secretaries, read the minutes of the 20th June (No. 19). They were approved with some modifications.

M. Mühlig asked for the correction of the 10th printed paragraph, in which he had erroneously been made to say that the question of disinfection ought to be placed at the head of the 3rd section (minute No. 10, page 22). M. Mühlig said that he had proposed that it should be placed in the first section of the third group.

His Excellency the President communicated a letter from M. de Krause, stating that, as he had been appointed to other duties, he would be replaced, as a Delegate in the International Sanitary Conference, by Baron Testa, a Delegate from the Prussian Government to the Superior Board of Health.

M. de Krause begged His Excellency to be good enough to express, in his name, to the honorable Conference the regret he felt at the termination of their official connexion. He intimated at the same time that the Sublime Porte had been informed that he had been replaced by Baron Testa.

His Excellency the President also informed the honorable Conference that one of the Dutch Delegates, Professor Van Geuns, was about to vacate his seat, having been granted leave of absence by his Government.

His Excellency then called upon M. Fauvel to continue the reading of the general report under discussion, and which had been interrupted, at the last meeting, at chapter XVII.

M. Millingen, with reference to this chapter, drew the attention of the Conference to a fact mentioned by Michel Lévy who noted it as a very significant and very singular one. It was with regard to the dissecting-room attendant who died in six hours of cholera after the opening of the corpse of an individual who had fallen a victim to the disease in the Crimea, and who had been conveyed to Constantinople. The occurrence had taken place in the French Marine Hospital at Therapia, where cholera did not prevail. (Vide Michel Lévy's *Traité d' Hygiène*, vol. ii., page 437.) This fact, recorded by a physician of such authority as M. Lévy, who was an eye-witness, would, in the opinion of M. Millingen, go to prove that the autopsy of a cholera patient, made several days after death, might communicate the disease to a healthy man and in a place where the disease did not prevail.

Baron Hübsch disputed the importance of the fact brought forward. He did not think it was conclusive, for during the Crimean war, he had frequently operated at post-mortem examinations in the Gulhané hospital, where, amongst others, he examined the bodies of infirmarians working in the hospital, who looked after the corpses of those who had died of cholera. Nobody had concluded from that that cholera had been transmitted to them by the corpses, it being much more natural to believe that they had contracted it from the same sources as the cholera patients themselves.

M. Fauvel, after having demonstrated that the fact recorded by M. Lévy, an author worthy of all respect, could not receive the interpretation M. Millingen had wished to give it, said that when the occurrence took place at Therapia, M. Lévy was at Varna. He also furnished additional arguments in development of the opinion of Baron Hübsch, and showed to M. Millingen that the fact he had quoted admitted of various interpretations, the most logical of which would be opposed to the idea he had attached to it.

His Excellency the President then put the text and conclusion of Chapter XVII to the vote.

They were adopted, the first by 23 votes, no votes *contra*, one member, M. Sawas, declining to vote; and the second by 22, no votes *contra*, and M. Sawas again declining to vote.

Votes for the *text*:—MM. Polak, Sotto, Segovia, Monlau, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Maccas, Bosi, Vernoni, Millingen, Gomez, Testa, Mühlig, Bykow, Lenz, Stenersen, Hübsch, Salem Bey, and Bartoletti (23).

For the conclusion:—All the preceding except M. Millingen, who was not present during the division.

M. Fauvel read the title and conclusion of Chapter XVIII. Text and conclusion were both adopted unanimously. All the members just mentioned voted, with the addition of MM. Sawas and Millingen (24).

The discussion next proceeded to Chapter XIX, several Delegates expressing their desire to speak.

M. Polak said that he had refrained in Committee from voting upon the chapter, because the conclusion did not appear to him to be so demonstratively proved by experience as had been said. Moreover, he added, it was said in the report that, in 1831, cholera had *probably been imported by sea*, while here a very categorical conclusion had been drawn. Be that as it might, he thought that the vast extent of the desert should have been mentioned, for it had been seen this year that the journey from Mecca to Yambo, which occupied ten days, had not acted as a preservative against cholera.

It was certain that the removal of an encampment, for a sufficiently long time, preserved people from cholera, even in very fertile countries, as had been seen by the movement of troops in India, but it was not demonstrated that that was the effect of the desert. M. Polak said in conclusion that he had simply abstained from voting, but that he had not voted against it, not being in possession of sufficiently decisive proofs.

M. Monlau explained the motives by which he had been influenced in refraining from voting for the chapter. The question had been badly framed. To ask what was the influence of deserts was, in his opinion, like asking, in regard to maritime communications, what was the influence of the sea.

The desert, he believed, was not a *means of communication*, but a *way* of communication. Everything then depended on the manner in which this way was traversed. If caravans were made to cross the desert by railway, they would be seen to propagate cholera: yet the desert remained the same. Thus then, said M. Monlau, it was evident that the desert was not the element which exercised the principal influence.

This influence moreover had nothing to do with propagation. The *desert* had no influence on propagation, because, in the first place, being a desert, it contained no population among which the disease could spread itself, and because, when the end of the desert had been reached and population commenced, there was nothing to propagate, since, according to the report itself, the disease had disappeared.

Lastly, to him (M. Monlau) the question was altogether one of transmission: it was simply required to know how cholera prevailing among the pilgrims of a caravan transmitted itself, and what was the influence of the mode of travelling by caravan. That influence, he thought, was evidently favorable: caravans were incessantly on the move, leaving behind them *excreta*, corpses, and perhaps even the sick. It was not surprising then that they got rid of cholera in a few weeks. The same might be said in regard to armies on the march and also all assemblages which were constantly changing their quarters. It was simply an application of the law of transmissibility. Moreover, in his opinion, a lapse of some weeks was no very short space of time, considering that in many localities the invasions of cholera did not last longer.

M. Monlau believed that there was no reason even to employ the figurative expression *barrier*. The desert was not a real anti-choleraic barrier for the pilgrims, for even in the desert the disease raged amongst them. Neither did the desert act as a barrier with regard to the localities at which the pilgrims arrived, because it was held to be a fact, the truth of which had been evinced, that they always arrived safe and sound and quite clear of cholera.

M. Gomez was of opinion that the conclusion drawn in this chapter did not harmonise with other parts of the same report. The contradiction was manifest, and resulted from the different interpretations which had been given of the same facts and the manner in which they were made use of. He would refer to one fact, *viz.*, that if, in May 1846, cholera was at Jeddah, it was not imported by the pilgrims. It was then not quite accurate to say, as had been said in another place in the report, that cholera had always manifested itself in the Hedjaz at the time of the pilgrimage. Verrollot admitted these appearances of cholera in the Arabian ports and towards the Red Sea to be frequent, but independent of the pilgrimage, and he went so far as to infer a certain *choleraic endemicity* in those ports, which were moreover very unhealthy.

M. Pelikan said he had refrained from voting because there were *savans* who asserted that the transport of cholera across the deserts was not only possible, but that it had sometimes been effected. Moreover, the conclusion of the chapter, in a theoretical point of view, could not stand severe criticism.

As for the instances quoted in the report to prove that cholera had never been imported into Egypt and Syria across the desert, he considered they were not more conclusive, for sea communication (as in Egypt in 1831) or river communication (as in Syria in 1823 and 1847) being naturally much more rapid than land routes, it was evident that in the abovementioned cases, where cholera had already been imported by navigation, the later importations might have remained unperceived by reason of the small influence they exercised in general on the progress of an already existing epidemic.

M. Bartoletti next spoke. He said in the first place that he did not pretend to explain how the facts occurred, but that he would confine himself to giving some information capable of throwing light upon the question, by demonstrating that cholera had always been arrested in Mesopotamia in every epidemic, numbering ten in all, from 1851 to 1860, mentioned by him at a previous meeting, in connexion with Persia. In these epidemics, said M. Bartoletti, the caravans which left Bagdad for Aleppo and Damascus had never carried cholera into Syria.

In the following précis, which commenced with 1847 and came down to last year, M. Bartoletti showed how the seven epidemics on record for the years 1847-48-50-55-58-59 and 65 proceeded from Mecca to Damascus.

1*st.*—In 1847 cholera existed at Mecca and diminished in proportion to the distance the caravan, leaving the coast of the Red Sea, buried itself in the desert. It had completely ceased by the time the pilgrims arrived at Damascus.

2*nd.*—In 1848 there was another epidemic at Mecca.

3*rd.*—In 1850 the caravan was attacked by cholera during the journey, but the sanitary physician stated in his report that by the 18th December it no longer existed. That year the cold was so excessive that many pilgrims and animals succumbed to it.

4*th.*—In 1855 the caravans, which arrived on the 28th October, had cholera. On its arrival, there were many cases of diarrhœa amongst the pilgrims, but without any fatal results. At that time the disease had existed since the 14th October at Beyrout as well as at St. Jean d'Acre and Tiberiad, but Damascus enjoyed perfect health.

5*th.*—In 1858, cholera existed at Mecca, and alarming news was spread with reference to the caravan. But it arrived at Damascus on the 24th December without any trace of cholera, and the health of the pilgrims had been satisfactory for thirty days previous to its arrival.

6*th.*—In 1859 the most melancholy news was circulated in regard to the sanitary condition of the caravan, in which, it was said, great mortality had occurred since the 1st August from cholera. On the 18th September, the caravan, comprising 1,600 pilgrims, arrived at Damascus in perfect health.

7*th.*—In 1865, the caravan arrived at Késuze on the 2nd July after the regulated visit of the sanitary Officer, who reported that only the ordinary diseases of the season, diarrhœa and dysentery, existed amongst the pilgrims. The caravan entered Damascus on the 3rd July. Cholera had ceased to rage amongst the pilgrims since their departure from Medina.

The sanitary physician of Damascus, said M. Bartoletti, stated in his reports that cholera, which that year had raged in the city, had not been imported by the pilgrims across the desert, but rather by the emigrants from Beyrout, who had sought refuge there before the arrival of the caravan. But the pilgrims who arrived *viâ* Egypt and *viâ* Beyrout had infected the city of Damascus, and the first case occurred in the Egueba quarter, where they were in the habit of stopping whence the disease spread through the city.

M. Bartoletti would ask, in conclusion, whether so many instances did not evidently prove that the desert was the most powerful existing barrier against cholera. To attempt at explanation of the fact he said would be altogether idle. Its importance ought to suffice, and it was universally admitted. He believed, therefore, that the conclusion of Chapter XIX was based upon incontestable facts.

M. Bosi confirmed in every point the information given by M. Bartoletti. He was in a position, he said, to produce facts in connexion

with this subject of which he had been an eye-witness in the years 1850-51-52 and 53. According to his experience, which was acquired on the spot itself, he could affirm that the caravan from the Hedjaz to Damascus had never imported the disease into that city.

M. Bartoletti thought it necessary to add, as a piece of information, that the sanitary inspector always subjected the caravan to a quarantine of observation; after the expiration of which only was it allowed to enter Damascus.

M. Polak, taking Rigler's work for his authority, disputed M. Bartoletti's assertions, and pointed out to him that no caravan went direct from Bagdad to Syria.

To which M. Bartoletti replied that there were routes of communication regularly traversed by certain trading caravans between Bagdad and Syria and also between Bagdad and Aleppo.

M. Fauvel first summarised and then refuted the principal objections urged by various speakers against the conclusion of chapter XIX.

In the first place he proved to M. Polak, in opposition to what he believed, that the conclusion was not unsafe in regard to Egypt and Syria. It did not say that it was impossible for cholera to have been imported into Egypt or Syria across the desert, but merely that no instance of it had yet been seen. If a fact—a single instance—existed opposed to the assertion, let it be brought forward, but until then the conclusion, which merely stated a fact, would remain unattackable.

With regard to the objections of M. Monlau, who had considered the question badly drawn up and the conclusion badly framed, and who considered the desert as absolutely nothing, M. Fauvel, on the contrary, maintained that the desert was everything and the caravan nothing. In fact, he said, for the caravans which propagated cholera wherever they went, to be able to communicate the disease, it was necessary in the first place that they should come across inhabited places, places where men live. The desert, which was scarcely peopled at all, and that was why it was called a desert, not presenting this essential condition, the disease arrested and wore itself out there; it constituted therefore a powerful barrier. The army mentioned by M. Fauvel, in passing across a desert, would place itself in absolutely the same conditions as caravans. Instead of propagating the disease, as it would do in all inhabited localities, it would have time, during its journey across the desert, to get rid of it. It was not, therefore, the army or the caravan which constituted a barrier against the disease, but rather the desert and only the desert, for the army and the caravan would always and everywhere else suffer from the disease.

M. Fauvel thought it necessary to insist upon the terms of the conclusion, for it was important to have a proper understanding regarding the value of a point on which appeared to rest a part of M. Monlau's argument, as well as that of M. Polak. The conclusion was far from setting up a doctrine; it only stated a fact; from this fact the conclusion regarding Egypt and Syria was deduced by the strictest logic: this conclusion

could not be demolished except by force of facts and instances in an opposite sense. These facts as yet did not exist, or at any rate they were not known : consequently all *à priori* arguments that might be adduced would be merely gratuitous hypotheses. To M. Gomez, who had asked for explanations and who had supposed that, according to the report, the desert was always a preservative against cholera, M. Fauvel observed that that had never been said : what had been said was simply that the desert was an efficacious barrier. M. Bartoletti had demonstrated that by facts. The objection, which M. Gomez thought very serious, relative to the importation of cholera into the Hedjaz in the month of May, had been triumphantly refuted by M. Millingen when speaking of the arrivals from India. And it was not correct to say that the fact of the importation of cholera into Jeddah was in contradiction to what had been advanced with regard to the desert. Finally, the instance of M. Verrolot, mentioned by M. Gomez, was of no value in connexion with the question treated of, for it proved nothing. The fact was noted in the report and even with the addition of the necessary critical remarks. But even if that fact were doubtful, would that show a contradiction between the conclusion and the rest of the report ? No ; for facts demonstrated that the desert was the best of barriers, and one single doubtful fact could not invalidate or weaken many well-known facts.

To the objections urged by M. Pelikan, who mentioned that he had refrained from voting, supporting himself with the opinions of *savans*, M. Fauvel replied that the Sanitary Administration of Constantinople was the source of the facts and information relative to the Hedjaz : it was the possessor of all the known facts, and *savans* would do well to seek for them there. Let them prove that the facts put forward by it were not correct, and then only would they be permitted to attack the conclusion : for hypotheses were not enough.

M. Monlau replied that it was quite true that there was no instance of the importation of cholera into Egypt or Syria across the desert, but he did not dispute, he said, the substance of the conclusion : he only attacked its form. It should be better formulated, in order to show that its authors were capable of properly interpreting facts, and care should especially be taken to guard against saying that the desert was an anti-choleraic barrier ; it should be recognised rather that it was only a simple auxiliary.

M. Gomez remarked that M. Fauvel had not understood him. He had never thought of attacking the desert theory, on the contrary, he upheld it, but he did not wish it to be enunciated in such a formal and dogmatic manner.

He was of opinion that if, in the paragraph treating of the epidemics in the Hedjaz (chapter IV of the Report), instead of saying that the manifestation of cholera in the Hedjaz had *always* coincided with the time of the pilgrimage, it was said that it had *almost always* done so, the contradiction which he thought he saw between this paragraph and the conclusion of chapter XIX, would, to a certain extent, cease to exist.

M. Bykow mentioned a fact which proved that cholera might be imported across the desert, and even across a great desert like that separating Bucharia from the town of Oremburg, which was about 300 German leagues distant from it, and which was traversed by the caravans in 65 days and more, never in less than 45.

This fact occurred in 1829. Cholera existed at Bokhara on the departure of the caravan, which on its return communicated it to the town of Oremburg (July 1829).

M. Fauvel said he did not mean to dispute the correctness of this fact, but it was still very necessary to have a correct knowledge of what the desert of Bokhara consisted of. Was it similar to the Arabian deserts, or was it not rather a great expanse of steppes, more or less peopled?

M. Bykow admitted that the desert between Bokhara and Oremburg was only a great extent of steppes, inhabited by nomadic hordes of Kirghiz Tartars, who were in frequent intercommunication. These steppes, he said, differed from the Arabian deserts, and that was why, in the fact just mentioned, it was necessary to consider this peculiarity, *viz.*, that cholera did not exist at the time among the Kirghiz hordes, and that it existed only among the persons comprising the caravan. This caravan occupied almost two months in the journey between Bokhara and Oremburg. Salem Bey assured the Conference that there were no instances of cholera having been imported by a caravan after having crossed the desert. The conclusion of the Committee was, he said, strictly deduced from recorded facts. At the same time, he thought it would be useful to pronounce the decision with more reserve, for the result of this reserve would be a surveillance exercised over caravans, which (as was done in Egypt and Syria) would not be at liberty to enter towns until after having satisfactorily shown their sanitary condition.

M. Salem Bey drew the attention of the honorable Conference to the very important fact that the arrival of caravans, in the various countries in which they were in the habit of stopping after their long and painful journey, ordinarily coincided with the more or less complete cessation of the choleraic epidemic in these same localities.

M. Sawas, though he had not the least intention of casting any suspicion on the facts mentioned by M. Bartoletti, which he also considered to be clearly shown, was nevertheless of opinion that the assertion in the conclusion where it was said: *there is no instance*, was too absolute, and was open to discussion. He (M. Sawas) believed that if there were no facts positively opposed to that assertion, there were at any rate doubtful facts, and as such he regarded the epidemic of 1831.

He entertained doubts in regard to the introduction of cholera into Egypt from the Hedjaz across the desert. Those doubts were not removed notwithstanding the assurance given by Clot Bey in his pamphlet, for in the *pièces justificatives* annexed to that pamphlet were con-

tained the reports of the physicians who were stationed at Suez on the arrival of the caravan, as well as those of other Government servants who, about that time, had been to the Hedjaz, from which reports some facts could be taken tending to weaken the assertion. These facts were as follow :—

1*st.*—When the caravan came in from the desert some deaths occurred, which were attributed to unsatisfied thirst ; but the physicians were not agreed as to the causes of death.

2*nd.*—The inhabitants of the village, who had gone out to the encampment of the caravan for the purpose of selling provisions, contracted cholera, and carried it to their village, which it ravaged.

Besides these facts, continued M. Sawas, there was also that of the appearance of cholera in Egypt two months and a half after the sacrificial ceremonies. Now, this lapse of time was much too long for a sea voyage. The voyage between the Hedjaz and Egypt could not, even at that season, last so long as two months and a half. But the doubt with regard to this point would not prevent the recognition of the other facts mentioned in the report in regard to the same epidemic.

M. Fauvel furnished the following information in connection with this subject. This information had been before given by him in Committee, where the question had been lengthily argued. The epidemic, said M. Fauvel, had broken out at Suez some time before the arrival of the caravan there. It was wrongly believed, therefore, that the pilgrims had imported the disease into Egypt. Clot Bey himself had established the fact that the epidemic prevailed at Suez before the arrival of the caravan, and the fact had, indeed, been sufficiently demonstrated, and it was besides admitted by all the members of the Committee. It was clear then, added M. Fauvel, that the disease was imported by the pilgrims who had taken the sea route, and even the Suez route. At that period the pilgrims did not make the voyage on steamboats but in barques, and the voyage lasted for a month and six weeks and even longer.

In compliance with a request made by several Delegates, His Excellency the President put the text of chapter XIX to the vote. It was adopted by a majority of 20, none voting against it, and 5 declining to vote.

For :—MM. Sotto, Segovia, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Bosi, Vernoni, Millingen, Sawas, Testa, Mühlig, Lenz, Bykow, Hübsch, Stenersen, Salem Bey, Bartoletti (20).

Declined to vote :—MM. Polak, Monlau, Maccas, Gomez, Keun (5).

His Excellency the President then put the conclusion of chapter XIX to the vote.

It was adopted by a majority of 22, none being against, and three declining to vote.

For :—MM. Sotto, Segovia, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Bosi, Vernoni, Keun, Millingen, de Soveral,

Sawas, Gomez, Testa, Mühlig, Lenz, Bykow, Hübsch, Salem Bey, Bartoletti (22).

Declined to vote :—MM. Polak, Monlau, Maccas (3).

M. Stenersen was not present at the division.

M. Fauvel read the heading and conclusion of chapter XX.

M. Monlau was of opinion that it was necessary to postpone the division upon the conclusion of chapter XX. It was necessary, he said, in the first instance, to study particular assemblages in order to be able to come with a knowledge of causes to this general conclusion, which was based upon facts not yet entered upon. Any other mode of procedure would be faulty, for it would rest on no basis.

M. Mühlig maintained a contrary opinion. The general report had been for a long time in the hands of the Delegates ; they had had consequently abundant leisure to study it and become acquainted with every part of it, in detail as well as a whole. Even if the conclusion was based upon facts which were brought forward further on, those facts ought to be known beforehand, so that there was no inconvenience in entering upon the discussion of the conclusion there and then.

M. Bykow thought that M. Monlau's motion would only tend needlessly to prolong the discussion ; he (M. Bykow) concurred in the views expressed by M. Mühlig.

M. Segovia did not think that M. Monlau's proposition would upset the arrangement of the general report : he thought it resulted from the tendency of the report itself. If the Conference adopted the views expressed by M. Mühlig, *i. e.*, if it adopted a general conclusion before accepting the facts from which it emanated, it would be altogether useless to discuss those facts further on, for they would have already been accepted. He (M. Segovia) thought that the reporter had only anticipated the conclusion with a view to facilitate work. But if the Conference thought it could proceed in that manner, he (M. Segovia) would not offer any opposition.

M. Mühlig did not believe that the general conclusion was a corollary to particular facts. It was a conclusion quite by itself, almost independent of the facts relative to particular assemblages regarded in the point of view of the influence exercised by them on cholera. Consequently the conclusion was logically placed where it stood.

Dr. Goodeve observed that M. Monlau's motion had been agreed to by the Committee, by which it had been admitted to be quite logical, as well as by M. Fauvel himself who had confessed it was more methodical. He recommended, therefore, that it should have the preference.

In compliance with the request of several members, His Excellency the President put to the vote, first M. Monlau's proposition, and then the text and conclusion of chapter XX.

Six members only voted in favor of M. Monlau's proposition, and ten against it.

The text and conclusion of chapter XX were adopted by a majority of 20, none voting against, and 2 declining to vote.

For:—MM. Vetsera, Polak, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Maccas, Bosi, Vernoni, Millingen, Gomez, Testa, Mühlig, Bykow, Lenz, Hübsch, Bartoletti, H. E. Salih Effendi (20.)

Declined to vote:—MM. Segovia and Monlau.

MM. Keun, Sawas, and Stenersen were not present during the division.

M. Fauvel read the heading and conclusion of chapter XXI.

M. Monlau believed that this conclusion had been already voted upon and accepted. He had abstained from voting in Committee upon either the text or the conclusion, because a show had been made of explaining transmissibility by endemicity, a thing which was in no way scientific. If a case—a single isolated case—broke out on board a ship, that, in his opinion, was far from constituting an epidemic. It was a matter of necessity to treat of transmissibility by itself, and it was then that the best demonstration could be found on board a ship. Why he asked, always speak of "choleraic source," "focus of infection," "invading epidemic," when the question was only of transmissibility? It was evident that the predominating idea, the constant tendency of the report, was in favor of epidemicity—transmissibility was only treated of parenthetically, and it was, so to say, subordinate to the epidemic theory. M. Monlau proceeded to refute several passages in the text of chapter XXI. He attacked the passage in which it was stated that it was a general fact that ships coming from an infected locality were not often the theatre of any choleraic manifestation. It was, he believed, a gratuitous assertion, which might even be disproved by the facts relating to the choleraic epidemic at Salonica, recorded in the pamphlet on that epidemic published by Dr. Alatini.

He rather believed that the general fact consisted in extenuating circumstances as well as in the dissimulation of masters of vessels who concealed the truth from fear of measures of quarantine. He also brought to notice a peculiarity in the passage commencing with the words "*It is also shown.*" In that chapter it was stated that two vessels, the *Friedland* and the *Jean Bart*, had each had a case of cholera on board previous to any communication with land or with the squadron, and it was added: "this fact may be interpreted as people can." But it was also recorded in another place with the remark that too may details were wanting to impart much value to it. In that case, he would ask, why record it if it proved nothing, or if it were susceptible of many and different interpretations?

But when attention was arrested at the paragraph of that chapter, where, after having affirmed, that the great majority of the ships leaving Alexandria had had no cholera on board during the voyage, it was said that it was certain that they had propagated the disease for the

decisive reason that cholera had manifested itself only at those places at which they had touched, it was proper, in his opinion, to require that instead of the fine irony which had dictated that chapter, the reporter should have admitted that the sanitary authorities were exposed to be deceived by all sorts of false declarations, and to be led into error by the exaggerations or dissimulation of masters of vessels, who very often, to use the happy expression of the report, represented their ships as "maiden" when they were contaminated.

There were no means, said M. Fauvel in reply, to follow M. Monlau in his argument. His reasonings were deduced from a theory peculiar to himself, and the Committee had no theory. In its report, it had, as had already been said, only brought forward facts, and from these facts it drew conclusions as strict as could possibly be drawn, and as logical corollaries. Two points were worthy of notice in M. Monlau's remarks:—In the first place he attributed to the Committee ideas which it had never entertained: he attributed to it matter and language not to be found in the report. Thus, for instance he attributed to it the idea of considering an insolated case of cholera on board a ship as an epidemic. He made it speak of maiden ships! Where was all that to be found? Could there be some other report besides the one drawn up by the Committee?

In the second place, he did not wish that the Committee should mention or make use of facts which were capable of different interpretations; and he forbad it to explain them as it thought proper. That appeared to annoy him as much as if the Committee had infringed the rules of logic. Yet it was easy to show him that the explanation of the Committee was the most natural and the most probable. Was it not, in fact, authorised to assert that the arrival of several ships in a healthy locality from an infected place ought to be considered the cause and origin of the epidemic manifesting itself after their arrival? Now, that coincidence having been only recorded, the Committee had attributed the importation of the disease to the ships, although it did not exist on board during the voyage. According to M. Monlau on the contrary, all ships coming from an infected port ought to have the disease on board, and, if the assertion was made that that did not always happen, it was, he had said, because, all captains without distinction dissimulated and deceived the sanitary authorities. That was M. Monlau's opinion, and he was at liberty to give expression to it. But it was right to remind him that experience was opposed to his opinion: it spoke in favor of the relative immunity of ships as much as it did in favor of the relative immunity of lazarettos.

He (M. Fauvel) thought it would be useless to say anything more in support of the report. The Committee had had but one anxious care: that of the discovery of truth by conscientious enquiry: it had applied itself solely to that.

M. de Lallemand thought that it would perhaps be necessary to add, as a sort of reservation, two words to the paragraph at page 51,

where the ships *Friedland* and *Jean Bart* were mentioned, which had each a case of cholera on board. He would suggest the addition of the words "*perhaps sporadic.*"

Having taken the opinion of several Delegates, His Excellency the President put the text and conclusion of chapter XXI to the vote.

The text was adopted by a majority of 20, none *against*, four Members declining to vote. *For*:—MM. Vetsera, Polak, Spadaro, de Lallemand, Fauvel, Dickson, Maccas, Bosi, Vernoni, Keun, Millingen, Gomez, Testa, Mühlig, Bykow, Lenz, Hübsch, Stenersen, Bartoletti, His Excellency Salih Effendi (20).

Declined to vote:—MM. Segovia, Monlau, Goodeve, Sawas.

MM. Kalergi and Sawas were absent during the decision.

The conclusion was put to the vote, and adopted by a majority of 19, none *against*, and one abstention, that of M. Maccas.

All the Delegates who voted for the text also voted for the conclusion with the exception of M. Maccas.

In addition to the two beforementioned Delegates who were absent during the division, during the present division there were absent also MM. Segovia, Monlau, and Goodeve.

M. Fauvel then read the heading and conclusion of chapter XXII.

Here, said M. Monlau, as in regard to the question of deserts, it would be said that the question had been framed with a view merely to produce a table; but unhappily this table did not prove much: indeed, in his opinion, it proved nothing at all.

The question of overcrowding in a lazaretto was, according to the report, one of the most interesting to consider; it gave a reply to a fear frequently expressed, &c. No, said M. Monlau, the important question with which to become acquainted was, whether a person could contract a disease in a lazaretto which he had not previously had; whether, being exposed to a pestilential disease, another of a different nature could be contracted, as happened in hospitals, where, while a man was being treated for a cold, he sometimes contracted ophthalmia, &c. That question, however, he observed, was not solved in the report. In connexion with this subject the account of the epidemic in Marseilles in 1821 might be consulted. The report went on to say that the same thing happened in lazarettos as in ships, and the occasion was taken to proclaim anew the great dogma of immunity, but the report made no account of local receptivity and individual susceptibility. One would say, taking the report for a guide, that one might stay in a crowded lazaretto without any inconvenient result.

The report, continued M. Monlau, showed a neat table indicating the number of persons admitted in 1865 into the principal lazarettos of Turkey, with the number of cases of cholera and the number of deaths recorded. But what was the object of such a table? The report itself said strict precision was not to be demanded of it. But

that was not the question. Everybody knew that in the Ottoman Empire quarantine was almost everywhere performed under tents or in the open air—how then could the assertion of the report be taken in a serious light that in many lazarettos the crowding had been carried to a very high degree, especially at Salonica? He would again urge reference to Dr. Alatini's pamphlet on the epidemic at Salonica, which stated the reverse. No conclusion could be drawn from the last epidemic which had raged in Turkey. The quarantine established on that occasion was set up almost entirely in islets, under tents and in the open air; of real lazarettos there were very few or none. Consequently the deduction made in the report, which said, "all that we pretend to deduce from this is that cholera has been only very feebly developed amongst the persons in quarantine in the Turkish lazaretto"—that deduction was not strictly drawn from facts, it was hazarded, and it must even be said to have been preconceived.

In conclusion, said M. Monlau, it was necessary to point out in a few words the ground of opposition that existed with regard to the conclusion of chapter XXII:—

1*st*.—The first part of the conclusion was inexact and unsupported by facts; it rested on weak arguments.

2*nd*.—The second part contained a commonplace, expressed in a familiar manner, which showed badly in a scientific report, *viz*., "lazarettos were bad neighbours." Such they must of necessity be, and everybody knew it, as much as hospitals and other similar establishments. But, if they were properly isolated, and properly watched, and if sanitary smuggling was rendered impossible, then the injurious influence which they exercised on all around them, and which caused an apprehension of the propagation of the disease from the lazaretto to its neighbourhood, might be lessened.

Influenced by all these considerations, and also by the reasons he had urged with regard to the text, he (M. Monlau) had refrained from voting in Committee when chapter XXII was being discussed and adopted, and he would also abstain from voting in the Conference.

M. Fauvel expressed his surprise to hear M. Monlau say that the Committee had not felt that their stay in a crowded lazaretto was hazardous to persons under quarantine. So far from that, the Committee, which had established a distinction between assemblage, accumulation, and crowding, had not omitted to give warning that, in the event of crowding, the epidemic would rage with greater force. It did even more than that: it expressed the fear that the simple fact of meeting together during the prevalence of an epidemic might create choleraic foci. The report went no further than to say that lazarettos might be qualified in various ways; they might enjoy a sort of relative immunity, and they might become centres of emission. In the idea of the Committee, the same thing happened in lazarettos that occurred on board ships. All that was advanced on this head was in no way conjectural: everything was based upon facts and examples.

It was true that those facts were not always conclusive, but as they were numerous, the best and most clearly recorded among them might be chosen to serve as instances. M. Monlau had disputed, relying on M. Alatini, the facts relative to the epidemic at Salonica, but M. Monlau, it appeared to him, had been wrong not to take into account the rivalries and the theories of physicians. Notwithstanding that, and notwithstanding assertions to the contrary, every body, said M. Fauvel, was agreed on one point, *viz.*, that notwithstanding the very large assemblage in the Salonica lazaretto, which contained 1,300 persons, the epidemic was neither serious nor very deadly.

M. Fauvel, in conclusion, declared that the Committee had never had the tendencies M. Monlau had wished to attribute to it.

M. Polak produced a table of arrivals in the port of Trieste during the year 1865. It might, he thought, be of use as a document in the historical précis which was proposed to be drawn up on the last epidemic of cholera, and it might also demonstrate that crowding in a lazaretto was not so dangerous as some, arguing *à priori*, would make out.

Several Delegates calling for a division, the text and conclusion of chapter XXII were put to the vote.

They were adopted by a majority of 15 votes, none *against*, and one member, M. Monlau, declining to vote.

For :—MM. Polak, Spadaro, Fauvel, Goodeve, Dickson, Maccas, Salvatori, Vernoni, Keun, Gomez, Bykow, Lenz, Hübsch, Bartoletti, His Excellency Salih Effendi. (All those members who had voted in the previous divisions were absent.)

The meeting terminated at 5-30 P. M.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO THE MINUTES OF THE 29TH MEETING.

Report on the measures to be adopted in the East in order to prevent a renewed invasion of Europe by Cholera.

Drawn up by a Committee consisting of Count de Lallemand, *President;* M. Kalergi, *Secretary;* MM. de Krause and Vernoni, *Diplomatists;* and Drs. Bosi, Bykow, Fauvel, Polak, Salem, Sotto, and Van Geuns, *Physicians.* *

(DR. FAUVEL, *Reporter.*)

GENTLEMEN,—The questions referred to the 3rd Committee comprise the consideration of the most important of the problems

* MM. de Krause, Van Geuns, and Polak were obliged to leave Constantinople before the termination of the labors of the Committee. The two first named gentlemen took part only in the discussion of the two first questions. M. Polak left during the progress of the discussion on the Mecca pilgrimage.

submitted to the Conference. The problem is, to see how far it is possible to prevent the renewed invasion of Europe by Indian cholera, and to indicate such practicable measures as are best suited to attain the desired result. To solve this problem, the Committee thought it was right to study it in the first instance in India, the original centre of the disease, and then in the intermediate countries traversed by cholera before its arrival in Europe, in which countries it would be desirable to set up efficacious barriers against its further progress.

The Committee has, therefore, divided its work into two principal heads:—the one treating of the measures to be adopted in India, and the other of those to be adopted in the intermediate countries lying between India and Europe. It then classed methodically in these two chapters all the questions which appeared to it to relate to the problem to be solved. At the same time, however, the Committee thought it useful to precede the consideration of the questions comprised in these two chapters by that of two others, the preliminary solution of which seemed to it to be indispensable to the object of its labors.

Chapter I.—Preliminary Questions.

I.

The first of these preliminary questions is as follows:—

If, on the one hand, we weigh the inconveniences resulting to commerce and international relations from restrictive measures, and, on the other, the disturbance and shock occasioned to industry and commercial transactions by an invasion of cholera, on which side is it thought would the balance incline?

This question supposes the solution in the affirmative of that of the efficacy of measures of quarantine against the importation of cholera; otherwise it is clear it would have no reason to exist. Now this affirmative reply having already been given by another Committee, we need not, for the present, dwell upon it. At the same time we reserve to ourselves to place in evidence the various conditions which cause it to happen that measures of quarantine have not always by any means the same efficacy, and consequently the same degree of utility.

The efficacy of properly applied quarantine measures being admitted in a general way, the first thing to be done is to reply to the question put, and to enumerate the disadvantages attaching to these measures.

Regarded as a whole, these disadvantages are proportionate to the greater or less extent of the disease and the importance and acti-

vity of the relations with other countries of the countries subjected to restrictive measures.

Thus, it is evident that if cholera occupies a restricted centre, the damage resulting from even very rigorous restrictive measures would be, in point of fact, as regarded in connexion with the rest of the world, only damage limited to the reciprocal relations of this confined centre with other countries, while, if the disease becomes general, if, for instance, it invades the basin of the Mediterranean, where the relations are so numerous, so active, and so imperiously necessary, the damage would attain considerable proportions, which would go on multiplying, and all the more because then the efficacy of preventive measures would become less certain, by reason of the impossibility of applying them usefully on all the points by which the disease could penetrate. All this is so manifest, that the Committee thinks it unnecessary to lay further stress upon the point.

Let us now proceed to the enumeration of the inconveniences considered in themselves. And in the first place let us look at them in the localities subjected to restrictive measures.

When a country is placed in quarantine, its relations are at once disturbed, and its export trade is hampered and interrupted by the obstacles it meets in every country where restrictive measures are in force. The injury is greater in proportion to the suddenness and severity of the measures. To the damage caused by loss of time is to be added that caused by the quarantine dues, which raise the prices of merchandise. The effect of the formalities of quarantine is the diminution of emigration from countries tainted with cholera; but is their consequence also to aggravate the prejudice caused by the epidemic itself? It could not be supposed to be so except under the supposition that they increase misery and distress in the countries upon which they are imposed. Such a consequence may be conceived if the measures were to become permanent, because in the long run they would impoverish the country; but epidemics of cholera in a given spot are ordinarily not long, and they are transitory by reason of the restrictions they entail: so that it is evident that when cholera prevails in a locality, it is the disease which increases the distress and poverty, and not the quarantine imposed upon the products of that locality.

The fact is that the damage caused in such cases is reduced to a temporary disturbance, to a pecuniary loss proportionate to the importance of the relations of the country attacked by the disease, and to the severity as well as the unforeseen suddenness of the restrictive measures. And it is also well to remark here that honorable merchants have remarked to the Committee that, directly the quarantine is raised, commerce recommences with an activity which may compensate for the loss sustained during its imposition.

The inconveniences of restrictive measures are chiefly felt in the countries imposing them. In fact, these countries, with a view to preserve themselves from an evil they dread, voluntarily so hamper and impede their own transactions, that the result is the temporary diminution of those transactions, and indeed a substantial tax upon their commerce. If the restriction applies to only a limited extent, the prejudice perhaps would not be very great, but if, as we have already said, the restriction applies to a great number of places, and if the country subsists chiefly by commercial relations, the damage may attain serious proportions, and all the more so that under such circumstances, it is no longer a question of a single circumscribed epidemic, the duration of which may be calculated, but of a series of epidemics which succeed each other, and which may considerably prolong the injury. It is necessary then that in this case the benefit of the measure should be proportionate to the injury occasioned by it.

In truth, the great damage here does not attach so much to the measure itself, reduced to its useful application, as to the vices of the application and the want of a mutual understanding between the various States. And in the opinion of competent and interested parties, it is incontestable that in compromised countries, the temporary disturbance to relations which accompanies restrictive measures is compensated for by the redoubled activity which follows their cessation.

Let us see now what are the consequences of an epidemic of cholera. When a country is a prey to an epidemic of cholera, we have in the first place to consider the desolation caused by the ravages of the disease; and next the disorder it imports into social relations and business of every kind. In this latter point of view, a serious epidemic of cholera is a great calamity. Under its influence, commerce and industrial operations are immediately suspended; the single idea of escaping death takes possession of the minds of the bulk of the public; the only transactions are in articles of absolute necessity; frequently scarcity ensues; misery and distress always rapidly increase amongst the people; and if this state of things were to be prolonged, or to be of frequent recurrence, a commercial or industrial city would have ruin staring it in the face. It has been owned to us by merchants whom we have consulted that the damage occasioned to commerce by restrictive measures is as nothing compared to the incalculable evils caused by the disturbance and shock of an epidemic, like that which prevailed last year at Constantinople, the disastrous effects of which are far from having been repaired yet. A country attacked by cholera suffers doubly, whether quarantine measures have been adopted against it or not. It suffers from the disease and in its commercial interests. It is to be remarked that merchants do not complain most of restrictive measures; because a shrewd, calculating merchant perceives in them the means of avoiding greater damage to

his business: but rather persons of leisure, tourists, whose excursions are impeded by these measures.

The disastrous influence of an epidemic of cholera in Europe is not limited to the countries affected ; it has its natural repetition not only in those who try to secure themselves by measures of quarantine, but also in those who think proper to oppose no barrier to the scourge. These last in reality, independently of the ravages of the disease, suffer from two causes,—the forced diminution of their commercial relations with the tainted countries where transactions are paralysed, and from the measures taken by the neighbouring countries with which they of necessity have relations. Ask England, whether, last year, though she instituted no restrictive measures herself, her commerce did not suffer from the effects of the epidemic prevailing on the Mediterranean coasts, and the restrictions in force in those parts ? Thus, cholera in itself is a cause of great obstruction to commerce, and it does not suffice to admit choleraic arrivals to pratique to escape the inconveniences of quarantine measures. To do this it would be necessary to have no relations with the countries where they are in force, or rather that they should never be put into force anywhere.

If then, by the adoption of suitable measures, the invading progress of cholera can be arrested, every interest exists in their adoption, since they will not increase the disturbance in business transactions with the countries affected, and they will tend to remove the damage caused by the ravages of the disease ; and as it can never be expected that the countries the most exposed to cholera, and which believe it is their dominating interest to secure themselves against it, will abstain from such measures, it follows that there is a common interest in coming to an international understanding on the subject.

What it is necessary to avoid is the employment of arbitrary and unexpected measures, and especially of inefficacious measures, which will only complicate the situation without proving of practical utility. It is necessary to apply the remedy where the evil is open to attack, that is to say where, with as little prejudice as possible, there is a chance of arresting its invading progress.

Conclusion :

The Committee is of opinion that *restrictive measures, made known generally beforehand and properly applied, are much less prejudicial to commerce and international relations than the disturbance occasioned to industry and commercial transactions by an invasion of cholera.*

This conclusion was adopted by all the members of the Committee, except M. Van Geuns.

II.

The second of the preliminary questions of which the Committee has thought it well to treat, as being of a nature to facilitate the solution of the problem confided to it, is this :—

Is it not necessary to start with the fundamental principle that the closer to the primary focus we apply measures of quarantine and other prophylactic means, the more we may reckon upon their efficacy?

It is not enough, in fact, to declare that cholera is transmissible, and to say, generally, that measures of quarantine properly applied are efficacious against the importation of the disease. It is necessary, in order to meet the object of the Conference, to find out first of all if it would not be possible, if not to stifle, at any rate to circumscribe, the evil in its origin ; and, in any case, it is important to indicate the most favorable conditions for the application of the most appropriate measures for the hindrance of its further progress. The Committee was influenced by these considerations in determining on the plan adopted by it for its labors.

In regard to the first part of the task, it will be seen further on what the Committee proposes with a view to restrain the development of cholera and to circumscribe it in India ; but as it is not probable that the desired result will be attained for a long while yet, we have thought it necessary to attach great importance to the question of restrictive measures outside the limits of the original source.

Now, if it be true, as we have said above, that the inconveniences of measures of quarantine augment with the diffusion of cholera in civilised countries at the same time that their efficacy diminishes, it follows naturally that the closer these measures are applied to the original focus in countries less peopled than those of Europe, and where relations are less numerous and natural obstacles exist to the progress of the scourge, the more will the chances of arresting it increase, and the less onerous will be the necessary restrictive measures, severe as they may be. So that, rationally, the question framed finds itself already solved in principle in the affirmative.

But it is necessary now to see to what extent, in the intermediate countries between India and Europe the measures of which we speak are practicable with any hope of success. A rapid glance over the course followed by cholera down to the present time in penetrating into Europe will throw some light upon the subject.

By the land route, cholera leaves India from the north-western provinces, thence it invades Affghanistan, and afterwards Persia by way of Herat and Meshed. This latter town, very important on account of its relations and its being the rendezvous of a great pilgrimage, becomes, by these causes alone, a considerable focus of emission, whence the disease radiates on all sides. From Meshed, on various occasions, cholera has spread in Bucharia, and thence, traversing the steppes of

Tartary to the east of the Caspian Sea and Lake Aral, in 1829, it went as far as Orenburg. From Meshed the principal radiation is, by reason of the numerous communications towards the east, and the disease makes no delay in gaining by way of Astrabad, the seaboard of the Caspian and Teheran. What we know of the epidemics of cholera in Persia shows us that the capital of the country becomes in its turn a centre whence the disease, marching in various directions, tends to become general; to the south it directs itself towards Ispahan; to the south-east, by way of Hamadan and Kermanshah, it reaches Mesopotamia; to the north-east it follows the Tauris route, and threatens the Ottoman territory by way of Bayazid and the Russian Trans-Caucasian provinces by way of Nakhtshivan; but the route it takes by preference in penetrating into Russia is more to the north, along the seaboard of the Caspian, by Rekht, Lenkeran, and Baku. It seems to result from communications made to us by Dr. Bykow, based on official documents, that cholera was imported by sea from these ports into Astrakhan, in the three epidemics of which that town has been the theatre. Be this as it may, it was *vid* Astrakhan that cholera penetrated into Europe in 1830, and it was again by this town, and at the same time from the Trans-Caucasian provinces, by way of the shores of the Black Sea, that the second invasion took place in 1847.

By the sea route, cholera is exported from India towards the west and north-west, particularly from the ports on the Malabar coast and notably from Bombay, where it is endemic. On account of their proximity and the number of their maritime relations, the eastern coast of the Arabian peninsula and the entire coast of the Persian Gulf, are more exposed than any other places to importation, and, next to India, cholera rages in these localities with the greatest frequency, so much so indeed that there has been some sort of ground for enquiring whether the disease is not endemic on the whole of this seaboard.

Persia then is exposed to the maritime importation of cholera, and it is, in fact, by this route that it has on several occasions penetrated into the country, and that it has also been seen, *vid* the Shatt-el-Arab, to reach Bassora and invade the province of Bagdad.

On the Arabian coast, Muscat, by its position, is one of those places most compromised by cholera. Ascertained facts also tend to establish that all the seaboard of Hadramaut, as far as the entrance to the Red Sea, is somewhat frequently visited by the disease; but, on this coast, particular mention should be made of Mokalla, where ships coming from India frequently put in for supplies before entering the Red Sea, and which is thus, as was seen last year, exposed to the attacks of cholera, and made capable of becoming a centre of propagation.

The other ports of India, besides those on the Malabar coast, similarly contribute to the exportation of cholera; but, considering the

distance, it is not directly towards the west, *i. e.* towards Arabia and the Red Sea, that men and things proceeding from Bengal propagate the disease; it is rather, on account of the proximity, towards the south-east, towards the Malayan peninsula and the Dutch archipelago, that the chief current of choleraic exportation in this direction fixes itself. Singapore, at the extremity of the Malayan peninsula, deserves special attention in the point of view we occupy. Not only is Singapore a great commercial entrepôt, but it appears, by its constant connexion with the continent of India, to be also an entrepôt of cholera. It is, moreover, the rendezvous of a considerable number of Mussulman pilgrims (averaging from eight to ten thousand annually) who come from Malasia and the whole Indian archipelago to embark at Singapore for Mecca. In this way it becomes one of the great centres for the maritime exportation of cholera to the Red Sea. Last year, those ships which suffered most from the disease during the voyage started from this place; and if we add that the embarkation of the pilgrims at Singapore is carried out in the worst manner possible,—as is proved from information afforded on the subject by our colleagues, the Dutch Delegates,—it will be understood that arrivals from Singapore should be reckoned as amongst the most compromising to the Hedjaz.

We come now to the Red Sea, the destination of all these arrivals by reason of the *pilgrimage*, at the same time that it is the shortest way for the maritime importation of cholera into Europe. The study of facts shows that the importation of cholera on the coast of the Red Sea may be effected, either by ships coming direct from India—though it would seem that, in that case, the importation takes place perhaps exclusively by means of pilgrim ships—or in an indirect way by emissions from secondary centres existing on the Arabian coast. Thus, it is certain that last year cholera raged at Mokalla before penetrating into the Red Sea; so that it cannot be asserted that it was imported into the Hedjaz more directly from India than from Mokalla. Be this as it may, it is not doubtful that cholera can be imported direct from India into the Red Sea; but, granting its possibility, it is essential to admit that leaving aside the conditions of crowding and wretchedness to be met with on board pilgrim vessels, experience has proved that the fact can only be exceptional.

We have seen that out of India Proper, the maritime countries where cholera has most frequently prevailed are towards the west, the province of Oman (Muscat) and the shores of the Persian Gulf, *viz.*, the countries in closest proximity to India, and those which have most relations with Indian ports: whence we are led to infer that the chances of the importation of cholera by sea diminish with the increase of distance, without however, being altogether removed. In regard to the Red Sea, what was seen last year points out, in effect, that if direct importation into it has not been strictly demonstrated, it ought at least to be considered probable. It shows also that another danger besides this exists—and one still more to be dreaded being more diffi-

cult to avoid: we mean indirect importation by means of the secondary centres of the coast of Hadramaut.

Lastly, if cholera is imported into the Red Sea, if, following the pilgrims, it penetrates into the Hedjaz, and if, from not being stopped in its progress, it invades Egypt, the danger is at the door of Europe, and importation into it will infallibly result if serious measures are not opposed to it.

After this short review, let us proceed to the question again, in connexion with the existing probabilities of arresting cholera after its departure from India in its progress either by sea or by land.

By land, we have said that cholera leaves India by the North-Western provinces and reaches Persia through Affghanistan. It is so because on this side alone do we find the only frequented routes uniting these countries, while more to the south, in the country known under the name of Beloochistan, vast deserts exist forming a natural obstacle to the invading progress of cholera. As a matter of fact, no invasion of Persia by cholera from this side has ever been known.

Although the routes leading from the Punjab across Affghanistan are not the easiest to travel, and though they help greatly in the matter of restrictive precautions, there is no use in thinking seriously of the institution, in these barbarous countries, of measures adapted to aid the natural existing obstacles for the purpose of arresting the extension of cholera. We believe that it is better to wait for the establishment, by the British Government, of a system of organised precautions in the Punjab itself.

Let us come to Persia. This country plays a great part in the propagation of cholera by land. Chief victim of the emissions of cholera from India by land as well as by sea, Persia becomes in her turn, by reason of her numerous relations, as has been seen above, a secondary centre whence the disease radiates far and wide. It is a matter of great interest then to preserve Persia against the importation of cholera. Is it permitted to us to hope that we may succeed? Considering only the natural obstacles in the north-east of this country, limiting the routes followed by the scourge; considering the position of Herat, which, placed in a short of defile between high mountains and the desert, is, in a strategic point of view in respect of cholera, the principal, perhaps the only, passage by which the disease has penetrated into Persia on this side; it would appear that here we find the most favorable conditions for opposing a barrier to the invasion of the disease and for preventing the invasion of such an important town as Meshed which, once attacked, becomes, for the reasons before mentioned, a most active focus of dissemination But is what appears here to be theoretically very possible, really so in practice? Is the Persian Government in possession of the means adapted to make the proper measures work usefully? It is very doubtful. And, on the other hand, is it possible for the Persian Government to institute, on its maritime frontiers

in the gulf, a sanitary system capable of preventing the importation of cholera in this direction? On this side the difficulties, it is true, would not be so great; but still it would be necessary to obtain the consent and co-operation in the measures to be adopted of the Imam of Muscat, who holds possession of the important port of Bender-Abbas and almost the entire navigation of the surrounding coasts.

Whether these measures are capable of realisation or not, it is the duty of the Committee to point out the capital importance of preserving Persia from invasion by cholera and to indicate the means of doing so, for, in the point of view of the generalisation of the disease, there, so far as the land route is concerned, lies the whole pith of the question.

In fact, Persia once invaded, the difficulties increase with the dissemination of the disease. To the north of Herat and Meshed, the way is open to Bokhara, and thence, by the commercial roads across the steppes of Tartary, to the confines of the Russian Empire. To the north-west and west we find the line of defence carried along the Russian and Ottoman frontiers, that is to say, over an immense extent, where the imagination can hardly conceive the establishment of an efficacious barrier against the invading march of the scourge. At the same time, however, considering the question closely and taking advantage of the lessons of experience, one does not fail soon to see that the question is not so difficult of solution as it seemed in the first instance. In reality, the routes followed by cholera in penetrating into Russia and the Ottoman territory are somewhat limited; they consist of the few commercial roads connecting Persia with Russia and Turkey. There is, in the first place, the sea route from Astrabad to Astrakhan, across the Caspian Sea, which, though it has not yet contributed, with certainty, to the importation of cholera into Russia, ought, nevertheless, to be watched attentively. Then there is the road, proved to us by experience to be much more dangerous, which follows the length of the southern coast of the Caspian and ascends towards the north to Baku. Then again there is the commercial road leading from Tauris into the trans-Caucasian Provinces *viâ* Nakhtshivan, though it must be noted that as yet cholera has never penetrated into these provinces by this route, but that it followed it in 1847 in order to repass from Erivan into Persia. In addition to these principal roads, there are others, no doubt, but difficult of access, and, therefore, much less to be feared. The fact is that in these countries cholera has always followed the great ways of communication.

There may, of course, be difficulties to be overcome in organising an efficacious barrier along the whole frontier extending from Astrabad on the Caspian Sea to the neighbourhood of Bayazid: but difficulties not insurmountable by the Russian Government. However, the institution of a system of defence on this frontier would be no novelty: the system has already long been organised: what is wanted is to bring it to perfection.

On the Turkish side, the line to be defended starts from Bayazid to the north, to the point of junction of the Russian, Persian, and Turkish territories—that is, supposing the trans-Caucasian provinces not to be invaded, for otherwise it would start from Batoun on the Black Sea, and proceed to the bottom of the Persian Gulf. This line is guarded by sanitary posts defending the principal entrances. The southern section of this line, from Khaneguin, has been, as has been said elsewhere, often crossed by cholera coming from Persia in the wake of the pilgrims, so that, if the system cannot be made to work better than it has yet done, the barrier would be illusory. There would then be great reason to fear the invasion of the Ottoman provinces and Europe in succession by cholera, but that happily the march of the disease, in this direction, is impeded by natural obstacles, *viz.*, by the desert separating Bagdad from Syria and the difficulty of communication in ascending the Tigris and Euphrates. These obstacles (except on two occasions, in 1823 and 1847 when the disease proceeded up the valley of the Tigris as far as Diarbekir, whence it gained Orfa and Aleppo) have always caused the extinction of the choleraic epidemics imported from Persia in the province of Bagdad. Still it is evident that serious measures must be adopted in this direction.

The northern section of the line, comprised between Kotur and Bayazid, would seem at first sight to be very dangerous as the door of entrance into Turkey. It is, however, to be remarked that it is not thence, but more to the north, by way of Kars and the coast of the Black Sea, that cholera, coming from the Russian provinces, has penetrated into the Ottoman territory, and has spread itself, as was seen in 1847. However, as this part of the line gives passage, near Bayazid, to the important commercial road which leads from Tauris to Trebizond, it is a point not to be neglected. It is for this that we find here the principal lazaretto on the entire frontier, at Kizzil-Diza, through which this road passes. It is necessary that here, in accordance with the requirements of the case, the means of action should be proportionate to the movements of commerce.

As for the intermediate portion from Kotur to Khaneguin, it corresponds with a mountainous region of Kurdistan, occupied chiefly by nomadic tribes, and not traversed by any very frequented route. On this side then natural obstacles are found, not insurmountable however,—we have had proof recently that they are not so,—but which might become so with the aid of a careful watch over the principal defiles.

We shall not carry our remarks with regard to the land route any further; for directly cholera invades the basin of the Black Sea, the natural obstacles diminish, at the same time that the chances of general diffusion and the inconveniences of restrictive measures increase.

Let us return to the maritime question. It has been seen that the coasts in closest proximity to India, and which have most relations

with that country, are most exposed to the importation of cholera; that, consequently, the danger of importation, by this route, is in proportion to the distance, *i. e.*, the time necessary to go from an infected to a healthy place. At the same time, if it is true that a long passage diminishes the chances of importation, it does not remove them entirely, and facts bear witness that crowded ships where cholera develops itself, may retain the disease and propagate it directly to countries very far distant from the point of departure. If the sea, as a great extent of space, is an obstacle insurmountable by cholera without the agency of a ship, on the other hand, by this intermediate agency, it assists the most rapid and compromising communications. But as these communications are amongst those which are the least difficult of watch and of subjection to restrictive measures, it follows that, definitively, the sea constitutes an excellent obstacle which it is possible to render insurmountable by cholera. It is important to see then, in the question with which we are occupied, how we may profit by this obstacle.

Cholera, we have said, may be imported from India to the bottom of the Persian Gulf, and, independently of Persia, thence directly invade the Ottoman dominions. It has been seen what were then its results, and how it was that the greatest danger to Europe did not exist in this direction. There is, nevertheless, ground for insisting on the measures to be adopted for the preservation of the seaboard.

From Muscat, from El-Katif, or from any other point on the eastern coast of Arabia, is it to be feared that cholera may traverse the peninsula and attain the coast of the Red Sea? It is doubtful whether, considering the deserts to be cleared, the thing has ever occurred; at the most, we can only conceive its possibility by the north of the peninsula, across the cultivated region of Nedjd. But what is greatly more to be feared is the propagation of the disease along the coast of Hadramaut, from port to port, as appears to have occurred on many occasions. Nevertheless, as long as the disease has not penetrated to the Red Sea, the danger is not yet very menacing, and it appears to us to be still possible to avert it.

The great interest of the question of preservation commences here: for here the first serious obstacle presents itself to the maritime importation of cholera in the direction of Europe. The Straits of Bab-el-Mandeb offer themselves, in fact, as a natural barrier which it would be possible to oppose to the introduction of the disease into the Red Sea. The situation of the straits could not be more favorably adapted for strict and careful watch; and if it were possible to organise suitable means of action on this point, it is evident that we should have almost completely solved the problem of preventing the importation of cholera by this route. It is there then that we must set up the first obstacle; and the Committee has not neglected to consider how it is possible to succeed in doing so.

Let us suppose now that, on account of insurmountable difficulties, or for any other reason, this obstacle has been neglected, or even

that it has not proved effectual, and that cholera has invaded the Red Sea and the Hedjaz, as usual, in the wake of the pilgrims. The danger would, without a shadow of doubt, as experience has proved, become very menacing. The question then would be to preserve Egypt from the invasion of the disease, and for the attainment of this object it will be agreed that severe measures would not be inopportune. These measures would constitute the second obstacle to importation.

Now, let us suppose that Egypt herself has been invaded: the only resource of which Europe could avail herself with a view to preservation would be to guard herself against arrivals from Egypt. Now, under this state of things, we do not believe that it would be possible to do this. It must not be forgotten that Egypt, towards the east and the west, is confined by deserts, and that, by reason of this fact, maritime arrivals from that country are by a great deal the most to be feared. We do not say that there would be no occasion to guard against arrivals by land, especially in the direction of Suez, where communication by land with Syria has lately become greatly extended: but it is in the direction of the sea that we have most specially to be forewarned and on our guard. Well, if, in order to succeed in obtaining efficacious protection, it is necessary to apply severe measures to Egypt during the prevalence of an ordinarily short epidemic, we would ask whether it would not be better, in every point of view, in the interests of Europe, to resign ourselves to the temporary inconveniences of these measures, rather than to put inefficacious formalities into practice, which would neither guarantee Europe, against the invasion of the scourge, nor against the innumerable disturbances which would result from it. For ourselves, with these alternatives before us, we would not hesitate to elect for efficacious measures, even though, they should be very severe.

Thus then, against the maritime importation of cholera into Europe, we conceive three series of obstacles ranged in the track of the scourge: first, measures at the entrance of the Red Sea to prevent the penetration of cholera into it; second measures for the preservation of Egypt should the coasts of the Red Sea be invaded; third and last, measures against Egypt to guarantee the safety of Europe.

In this exposition we think we have replied, within the limits of the possible, to the question framed in commencing. It is, we say, rational to admit that the closer the application of prophylactic measures is made to the primitive focus of cholera, the more their efficacy can be reckoned upon. Not only does reason tell us that the more limited the focus is the less difficult it is to circumscribe it; but the study of facts also shows that the routes followed by cholera in coming to Europe are much more limited and more easy of watch and ward than one would be inclined at first to believe: that thus, in the neighbourhood of India, by the *land route*, natural obstacles exist to the invading march of the disease, which confine its field of expansion and retard its progress, circumstances by which it would not be impossible to profit by the adoption of appropriate measures; while, in

proportion as the disease spreads and approaches Europe, the more the natural obstacles diminish and the more feeble the means of action become they at the same time become more onerous and burdensome; and that, on the other hand, the *sea route* offers a natural barrier which may most undoubtedly be rendered insurmountable. Consequently, the consideration of the question in a practical point of view tends to confirm what common sense indicates, *viz.*, that we must not wait for the arrival of cholera in Europe before we combat it, but that it is rather at a distance, on the roads generally followed by it, that it is necessary to endeavor to bar its passage.

This being the view of the Committee, as to the principal direction to be given to the employment of prophylactic measures, is it to be inferred that it lies under any misapprehension in regard to the practical difficulties, the impossibilities even, of application, which, in the existing state of things, the system for which it argues must encounter? No, the Committee is under no illusion on this score. It knows, particularly so far as concerns the means of preventing cholera from propagating itself by land from Persia, and spreading further, what little hope of success exists. And yet it could not but see that that was the strategic point of general preservation. It is, therefore, in this portion of the problem, rather a plan, a subject for study, which it proposes than a system capable of immediate realisation. Moreover, the Committee will, when it enters further on into the details of the measures, take care to indicate what it thinks ought to be of immediate application.

Conclusion:

The Committee, influenced by the preceding considerations, replies *that the closer to the original centre of cholera measures of quarantine and other prophylactic means are applied, the less onerous will these measures be, and the more may their efficacy be depended upon* (granting their proper application) *in the point of view of the preservation of Europe.* (M. Polak declined to vote.)

The Committee having now replied to the two preliminary questions, and developed its plan, it only remains to it to enter into the details of the measures considered in themselves.

CHAPTER II.—MEASURES TO BE ADOPTED IN INDIA.

III.

Is there ground to hope for success in the extinction of cholera in India, or, at any rate, in the restriction of its epidemic development? With this object in view, would it not be well, while continuing the hygienic improvements already undertaken, to make fresh studies of the endemicity of the disease, studies to be made on the spot, which would necessitate much time, and which the British Government alone is in a position to undertake? Indicate the special points to which these studies should apply.

The idea that it would be possible to extinguish cholera in India has occurred to the minds of many medical men; and on the occasion

of the last epidemic, it was so generally accredited, that it might be said to have become popular. The idea in itself is quite rational. The *invading* cholera which we observe at the present day being necessarily the result of new conditions which were produced in India towards 1817, it is allowable to conceive that these new conditions are not indelible, and that if we could succeed in determining the circumstances which maintain the disease in certain localities of India, we should succeed in causing them to disappear and as a consequence extinguish the disease. Analogies are not wanting in support of this hope. The plague, for instance, which was considered as endemic in a part of the East, has been extinguished. There is nothing unreasonable, therefore, in the hope that success may attend the endeavor to extinguish cholera. In the actual state of knowledge this is all we can say. But some have gone further. Maintaining certain theoretical views, some have believed that they have found the generating cause of cholera in the emanations of an alluvial soil impregnated with animal and vegetable detritus, attributing, in order to justify this hypothesis, an important *rôle* to the corpses cast into the Ganges; and as to the recent appearance of *invading* cholera, these persons have not hesitated to explain it by the unhealthiness resulting from the recent destruction of canals which formerly furnished water for the fertilisation of the country and the use of the people. In the *General Report,* we have seen what ought to be thought of these suppositions, which make the great mistake of not being in harmony with facts. We shall say nothing more about them.

The truth is that the particular circumstances which make cholera permanent in some parts of India are as yet unknown, or, in other words, the truth is that we are not acquainted with the essential cause of choleraic endemicity. We do not even know exactly what all the localities are where cholera really exists endemically; nor what are the limits of a given place, nor what is the existing connexion between the endemicity of the disease and its epidemic development.

It would be of great interest then to undertake continued researches into this grave question, and it is incontestable that the British Government alone possesses the means of causing such a work, which would occupy years of study, to be brought to a successful termination.

The Committee has certainly no pretension to dictate to the distinguished physicians who are already occupying themselves with these questions, the best course to follow in such an enterprise; but it cannot refrain from expressing an opinion upon those special parts of the problem which appear to it to be most worthy of attention.

What do we know of the endemicity of cholera in India? We know cholera is endemic, chiefly in certain localities of the valley of the Ganges, and notably in Calcutta, Cawnpore, and Allahabad, and in other parts of India, at Arcot, near Madras, and at Bombay. But is it quite certain that cholera is endemic only in these localities? Not at all: a great deal of uncertainty exists upon the subject.

It is necessary then to state with greater precision than has hitherto been done, the places in India where cholera exists endemically. It is a question of statistics.

In the solution of the etiological problem of the endemicity of the disease, the Committee estimates that the most important perhaps of the questions to be considered would be that of the particular conditions of the soil in those localities where the endemicity is very manifest; do we *always* meet with these under the conditions which Pettenkofer regards as indispensable to the development of cholera?

Moreover, do the localities where the disease is endemic distinguish themselves by any *exclusive* peculiarity, in the situation of certain places and dwellings, either in connection with certain newly contracted habits—in regard to the cremation of corpses for instance—or in relation to food, conditions of poverty, &c.? It is clear that the greater part of these questions cannot be answered except after a comparative study made on a large scale, and this is not the work of a day.

Definitively, the object of all these studies would be to ascertain whether, in a place where the disease is endemic, the principle of cholera regenerates itself spontaneously independent of the human system,—if, for instance, being the product of some peculiar organic decomposition, it generates and evolves itself with more or less activity from the soil like marshy miasma? Or whether, as is more probable, the morbific principle, being once produced, regenerates itself entirely by means of man: the soil and every thing existing on its surface being only more or less favorable receptacles where the germ proceeding from choleraic patients may preserve itself, and whence it may evolve itself with an activity varying according to the auxiliary circumstances?

Another question of great interest to be solved would be that of the connexion existing between the endemicity of the disease and the development of epidemics in India. Has every epidemic its root and origin in an endemic centre? For instance, are the epidemics which develop themselves every year on the occasion of certain pilgrimages, the result of the importation of cholera among the pilgrims by individuals coming from endemic foci? Is there not reason to believe on the contrary that in those places of pilgrimage where cholera breaks out every year, the principle of the disease permanently exists in those localities, but that it manifests its presence only under the favorable conditions produced by the pilgrimage?

Lastly, since 1817, has an epidemic of cholera been observed to break out spontaneously in any locality in India previously exempt from the endemic presence of the disease? And, if this is so, has it been remarked that such a manifestation has been the starting point of an *invading* epidemic?

Such, according to the Committee are the chief problems, the solution of which should be the object of the studies already undertaken, or yet to be undertaken.

But, independently of these studies, the Committee thinks it would be important to pursue with the greatest energy the hygienic improvements already commenced by permanent Commissions *ad hoc* especially in localities where the disease is manifestly endemic, and to impart the benefit of these improvements as much as possible to the native population.

The Committee would also ask whether it would not be possible to institute, in connexion with endemic foci, some precautions calculated to restrict the exportation of the disease? The question is one which it simply puts forward.

But what the Committee thinks it its duty to say before concluding this part of the subject, is, that it is convinced that, with a view to attain the desired object, *viz.*, the restriction of the ravages of cholera in India, hygienic measures should be adapted to all classes of the population; otherwise what has hitherto been the case will still occur, *viz.*, that all the solicitude, all the admirable precautions by which the British troops in India are surrounded, will not prevent the occurrence of considerable losses among them, as has been shown by statistical information, and that this will probably be the case as long as the source of the disease amongst the natives is not restricted. This, moreover, appears to have been perfectly understood by the British Government, if we may judge by the immense works of sanitation which were commenced in the chief cities of India some years ago, and the important rôle attributed to the *three permanent Sanitary Commissions.* (*See with regard to this subject Annexure A., extracted from a note communicated by Dr. Goodeve*).

To sum up: the Committee does not consider it impossible to succeed in the endeavor to extinguish invading cholera in India; and at any rate, it believes that the epidemic development of the disease in that country may be restrained. For the attainment of this double object, it asserts the necessity of continued studies, having for their object the determination of the special conditions which produce and maintain endemic cholera, and likewise of the connexion existing between the endemic disease and epidemic outbreaks, while at the same time the hygienic improvements already set on foot should be continued. As for the special points to which these studies should particularly apply, the Committee refers to what has before been said upon the subject.

IV.

Judging from what we know of the capital rôle performed by pilgrimages in the development of cholera in India, is it not desirable that efforts should be made to restrict the influence of this cause as much as possible and to continue on a larger scale the employment of the measures already put into practice for the last two years with some success? Indicate these measures.

It is incontestably a matter of the greatest interest to endeavor to restrain the influence exercised by Hindoo pilgrimages upon the

development and propagation of cholera; for, as has been shown in the *General Report*, these pilgrimages are incomparably the most powerful of all the causes of epidemics in India. This point cannot be too greatly insisted upon. It is necessary to be firmly convinced that what has been said in the *General Report*, of the importance of these pilgrimages, or fairs, far from being exaggerated, is, on the contrary, within the truth. When we consider the great number of holy places, the prodigious crowds which periodically assemble at some of them, the conditions in which these pilgrimages are effected, the perpetual movement to and fro, of concentration and dissemination, which result, we are penetrated more and more with the conviction that this is, in fact, one of the mose energetic causes of the development and propagation of cholera; and we are surprised that it should have been, if not unknown, at least neglected, until within a short time past.

To the Government of Madras, and especially to Dr. Montgomery, is due the honor of having understood the necessity of restraining the disastrous influence of these agglomerations, and of having, in 1864, with this object in view, made the first essays at Conjeveram of measures of hygiene applied to pilgrimages. These measures consisted especially in the establishment of temporary latrines, whence excramentitious matters were removed twice a day and buried at a great distance; the organisation of a service for sweeping and watering the town, and removing filth and ordure by means of carts; the removal of cattle during the ceremonies; and the supply of good drinking water accessible to all. The fact is that that year the pilgrimage was accomplished without any manifestation of cholera, and that the same measures had the same result again in 1865.

The experiment tried at Conjeveram was repeated in 1865 in the Presidency of Bombay with certain modifications and on a larger scale. The following measures were prescribed for all places of pilgrimage:—"The establishment of latrines, which, in the absence of better, might consist simply of deep trenches excavated in the earth to leeward of the dwellings or encampments, an obligation being imposed upon those making use of them to cover their excrementitious matter with earth; the disinfection of choleraic matter either by a solution of the permanganate of potash, chloride of zinc, carbolic acid, or simply by quicklime."

With regard to the *return* of the pilgrims:—"Encampment; prohibition against entering a town or military station unless on production of proof of exemption from choleraic infection. They had to prove that no diarrhœa, or other indication of cholera, existed among them, and that 48 hours at least had elapsed since they last had communication with a person affected with diarrhœa or cholera. In the absence of these proofs, the pilgrims were kept under observation for 48 hours, at the end of which time, if they showed no sign of the disease, or of its premonitory symptoms, they were at liberty to enter the town."

"Individuals presenting indications of cholera were separated from the others, and these last recommenced a quarantine of two days.

"In view to the application of these rules, measures were taken for the supply to the pilgrims of provisions, water, shelter, medical assistance for the prevention or treatment of the disease on its outbreak: also the isolation of the sick under tents."

In consequence of the application of these measures in the Presidency of Bombay, it was stated that, in 1865, out of 94 places of pilgrimage, in which from 2 to 50,000 pilgrims had been gathered together, cholera showed itself in two only—without, however, causing serious ravages—at Jeypoorie, where 5,000, and at Sungum where 50,000, pilgrims were assembled. (*Report of Dr. Leith, President of the Sanitary Commission of Bombay, March* 10, 1866.)

Thus the first attempts to restrain the disastrous effects of pilgrimages by means of hygienic measures were followed by very encouraging results, the value of which, however, must not be exaggerated, considering that they only relate to experiments made for two years.

Taking these attempts into consideration, the Committee asked itself whether it would not be possible to add certain precautions to the measures already taken; and after consideration, it thought that if we could succeed in diminishing the influence bearing upon places of pilgrimage, by previously imposing certain conditions upon those desiring to proceed to them, we should proportionally diminish the danger of these agglomerations. Would it not be possible to require that, previous to his *departure*, each pilgrim should be furnished with special permission from the local authority of his jurisdiction, which permission should not be given him except he afforded proof that he had the means to provide for his necessities during the journey? Such a condition would tend to remove from the pilgrimage the mass of mendicants who swarm thither, and who form the principal aliment of choleraic epidemics.

The Committee can only recommend without solving this important question, because it is to be feared that the measure it has in view may rouse dangerous opposition amongst the natives. In this and similar matters, the English Government is the best judge whether the measures are judicious and opportune or otherwise.

As for the sanitary police of the places of pilgrimage, which comprises the employment of the hygienic measures above mentioned, the Committee can only praise the measures already put in force with success, and express a wish that they may be generalised and completed according to the indications of acquired experience.

There remains a third order of precautions applicable to cases where, in spite of every thing, cholera breaks out among the assembled pilgrims. It is then, at the time of the *return* in fact, that the greatest danger of the pilgrimages commences, when the infected mass separates

and disperses, carrying the disease with it, and spreading it far and wide in every direction.

Against this danger of propagation the Government of Bombay has already, as has been seen, adopted certain measures, principal among which is that of prohibiting the entrance into towns of pilgrims having cholera amongst them. But is that a sufficient precaution, and is the 48 hours' quarantine of observation, connected with it, a substantial guarantee? The Committee does not think so. It believes that the true way of preventing the diffusion of the disease would be not to permit the departure of the contaminated mass until after the complete cessation of the epidemic, and after a general disinfection. Such a measure presupposes a suitable space where the mass could be separated and maintained without any want of shelter, provisions, and drinking water. Now, if we conceive the possibility of making so many conditions for some thousands of individuals, it must be admitted that the difficulties of application would rapidly increase with a greater number, and that if it were required to apply the measure to the immense assemblages to be met with in certain Indian pilgrimages, it would become altogether impracticable.

Nevertheless, the principle of opposing an obstacle to the dissemination of cholera is none the less good in itself, and the Committee estimates that on every occasion on which it would be possible to apply the measure it would be well to do so.

To sum up: the Committee is of opinion that to oppose the influence of Indian pilgrimages on the development of cholera, it would be necessary, first, to endeavor to effect a diminution in the numbers of pilgrims by obliging them, if it be possible to do so, to provide themselves before their departure with permission, which should be given only when an individual furnishes proof that he possesses the means of providing for his necessities during his journey; 2nd, to establish at all places of pilgrimage a sanitary police understanding the application of the hygienic measures already put into practice and completed in accordance with the teachings of acquired experience; 3rd, in the event of cholera breaking out amongst the pilgrims to prohibit the return of the contaminated mass, whenever such a measure would be practicable, until after the cessation of the epidemic amongst them and a general disinfection.

V.

Is it not necessary to put into practice means adapted to prevent the exportation of cholera from India? Amongst these means is there not reason to note the institution of a sanitary police at the point of departure specially applicable to the pilgrims, and, in seasons of epidemics, that of bills of health, &c.?

The necessity of according great importance to the means capable of preventing, or at least of diminishing, the maritime *exportation* of

cholera from India is all the more shown, that the employment of these means is solely within the province of the British authorities, and is not of a nature to remove all the practical difficulties which may prove obstacles to the measures adapted to extinguish the disease. The rule promulgated in 1858 by the Government of India regarding *ships employed in the conveyance of native passengers leaving the British possessions* was the first important Act passed in this sense, although it did not have cholera in view, and even at the present day, it may be considered as the basis of all the measures to be adopted against the exportation of the disease.

The principal sections of this Act, which we publish as an annexure to this report (*see Annexure B*) relate to the number of passengers, the supply of stores and provisions, the hygienic condition and sea-worthiness of the ships engaged in the trade, and they contain the most judicious prescriptions on this head. The Act, however, at the same time, shows some imperfections and omissions which practical experience since its promulgation has made evident. For instance, it is wrong in being applicable only to vessels under the British flag, and of being, in consequence, easily eluded by speculators who engage in the business of the transport of Mussulman pilgrims by means of foreign vessels, and notably under the Turkish flag. This is demonstrated by the statement of ships which carried Indian pilgrims to Jeddah last year and this year.

Could not the Act in question be applied without distinction in all the British-Indian ports—nay more, in the ports of every Power having Indian possessions, to all ships of the class of which we speak, whatever their flag? This would be an essential condition to be fulfilled.

Another circumstance to be noted is, that certain masters of vessels under the English flag find means of evading the prescriptions of the Regulation when they go to Jeddah. In support of this assertion we may call to mind the instances of the two sailing vessels already mentioned, the *North Wind* and *Persia*, which probably had on board a number of passengers in excess of the regulated number—the one 632, and the other 530, and which suffered so greatly from cholera. These ships started from Singapore: they put in at Mokalla, where English authority does not exist, and finally reached Jeddah, avoiding touching at Aden. The port of Singapore is subject to the Regulation: but is control avoided by touching at Mokalla instead of at Aden? Can the infringement of the Regulation be noted and followed up at Jeddah? We cannot say; but still it appears to us very evident that in these cases the Regulation was infringed, that is to say, the ships carried in proportion to their tonnage a greater number of passengers than is allowed by the Act. We do not say that the infraction did certainly occur, because we have not been able to find out what was the tonnage of the vessels.

Another omission in the Act is that British vessels leaving a foreign port are not subject to its provisions: thus, for instance,

the *Sydney*, which, in proportion to its tonnage, would not perhaps be allowed to carry more than 500 or 600 passengers, was able with impunity to carry as many as 2,000 from Jeddah to Suez. It would be desirable then to extend the provisions of the Act to every place.

In the details of the Act, it is to be remarked that it says nothing relative to the sanitary state of the persons embarking, and that consequently there is nothing to prevent the embarkation of sick people affected with the premonitory accidents of cholera; and similarly in none of the sections is any mention made of the measures which may be rendered necessary by the sanitary condition of the ship on its arrival. These are important omissions.

However this may be, the Regulation is an excellent Act, which, with certain extensions and additions, would answer completely the object to be attained in connection with the conditions of the embarkation of the pilgrims.

But this is not all. The Act applies only to the hygienic and seaworthy condition of the ships, and, even when completed, it should not exempt any ship leaving India, as well as any other country, from being provided with a *bill of health* showing the sanitary condition of the port of departure and the number of persons embarked; which bill should be *visé* in all ports of call conformably to the rules adopted in Europe. This is an addition which the Committee considers indispensable. Such a document, to have its full value, ought to be delivered by some constituted sanitary authority at the port of departure; consequently it would be necessary that a medical service *ad hoc* should be especially organized in ports where the embarkation of pilgrims takes place. Among the ports which in this point of view, deserve special attention, the Committee points to Singapore in the first rank, for the reasons given above.

The Committee, then, asserts the necessity of a sanitary department in India, which would deliver bills of health, and which, in regard to pilgrim ships, would see, not only that the provisions of the Act relating to them were carried out, but also that no suspected sick person was embarked.

The Committee put the question to itself whether, in the event of an epidemic of cholera occurring at the port of departure, it would not be possible to stop the embarkation of pilgrims at that port, or to postpone it till the cessation of the epidemic, or to render the conditions of embarkation greatly more strict than ordinarily? But these are delicate questions, the solution of which should be left to competent authority. A question of the same class is that of ascertaining whether it would not be possible to require from every Indian Mussulman pilgrim, before his departure, the proof of his being in possession of means to meet the necessities of his journey.

In connexion with this subject, the Committee will mention an interesting communication made to it by M. Van Geuns regarding a

measure of this sort put into execution since 1859 by the Dutch Government in its Indian possessions. The Dutch Government, wishing to reduce the annually increasing number of pilgrims going from its possessions to Mecca to the great prejudice of the country, imposed on each pilgrim the obligation of providing himself with a passport, the cost of which was fixed at 110 florins. The High Court of Justice having declared this measure illegal, the passport system was suppressed in 1852. The number of pilgrims then increased to such proportions, that the Government deemed it necessary to re-establish the obligation of a passport to be delivered to each pilgrim on certain fixed conditions, the chief of which was that applicants for passports were to prove that they were in possession of the necessary expenses of the voyage, to and fro, and that they had taken proper measures for the maintenance of their families during their absence (*see Annexure C*, containing the principal provisions of this Regulation). It will be seen from this that such a measure is already in force, and that it would not perhaps be impossible to extend it to British India.

The Committee sums up its opinion as follows:—*It is of the highest importance to endeavor to prevent the maritime exportation of cholera from India.*

The Regulation promulgated in 1858, *and intituled* THE NATIVE PASSENGERS' ACT, *would be one of the chief means of attaining this object if it were applied without distinction to all flags and in every country, and if it were completed in the point of view of sanitary precautions.*

Moreover, it would be necessary that every ship leaving an Indian port should be provided with a bill of health delivered by a sanitary authority constituted ad hoc, who would at the same time be charged with the duty of seeing to the proper execution of the rules regarding the embarkation of pilgrims.

In addition, the Committee believes that there is occasion to look into the questions of ascertaining whether, in the event of the occurrence of an epidemic in any part of India, it would be possible either to suppress, or defer, or to restrict the embarkation of pilgrims at that place; and, lastly, whether, following the example of the Dutch Government in its Indian possessions, it would not be possible for the authorities in British India to exact from every Mussulman pilgrim the proof that he possesses the means of defraying the expenses of his journey, and of providing for the maintenance of his family during his absence.

CHAPTER III.

Measures to be adopted in the countries situated intermediately between India and Europe.

The object of these measures ought to be the prevention of the importation of cholera into Europe by *the maritime route, viz.*, by the Red Sea; or by *the land route, viz.*, by Persia and the adjacent coun-

tries. We shall treat first of the measures to be opposed to its importation by sea.

A.—Measures against the importation of Cholera from India by sea.

VI.

Following the plan adopted by the Committee, the first question to be solved is the following:—

Would it not be advisable to institute at the entrance to the Red Sea, in an island if possible, a sanitary establishment, where all ships entering the sea should be subjected to search, and, if necessary, to measures of quarantine? Supposing the question to be answered in the affirmative, what ought to be the character of this establishment? In what cases, by whom, and how should these measures be applied?

First.—Advisability of a sanitary establishment at the entrance to the Red Sea.—The utility of such an establishment is not doubtful; it has been demonstrated, theoretically at least, by the considerations we have urged in the development of our plan. The question at present then is to know whether, in a practical point of view, such an establishment would be capable of realisation; if, at the entrance to the Red Sea, the conditions indispensable to its working exist: a convenient site, security, salubrity, safe anchorage, drinking water in sufficient quantity, and a facility for the supply of provisions. It is clear that if these conditions are not to be met with, in reasonable proportion, on any point of these shores, the establishment would not be capable of realisation. It is, moreover, certain that even should all these conditions be united, the question would still not be solved since it would not be impossible that considerations of another kind might prove an obstacle to an establishment of this sort.

Leaving aside every other consideration, we have applied ourselves to see if the conditions requisite for a large quarantine establishment really exist at the entrance to the Red Sea. We have not lost sight of the fact that the establishment in question, its object being the prevention of the importation of cholera into the Red Sea, must be a post of observation as well as a lazaretto: that consequently it should be so situated as to be enabled to exercise an efficacious surveillance over all ships entering the sea, and moreover possess the means of properly subjecting contaminated ships to the prescribed measures; conditions which imply, specially that relative to surveillance, the closest possible proximity to the Straits of Bab-el-Mandeb.

In this situation we find the island of *Perim*, in the narrowest part of the straits, which it divides into two channels of unequal width. The great channel, between the island and the African coast, is 14 miles wide, the smaller, between Perim and Cape Bab-el-Mandeb, or rather between Perim and a small islet (Pilot island) separated from

the cape by a narrow channel, is only 4½ miles wide. Ships can enter or leave the Red Sea by both these channels. The island of Perim is 4½ miles long and 2 broad, and 230 English feet above the level of the sea. It is a naked rock, possessing absolutely no fresh water. In the south-western portion of the island, on the coast looking to the larger channel, is a good port, but of small capacity. This disadvantage, however, is compensated for by a good anchorage at a small distance from the island, near Cape Bab-el-Mandeb. The English garrison in Perim receives all its supplies, including water, from without.

In regard to position, *Perim* then leaves nothing to be desired; it commands the straits, and it would be easy to organise a strict surveillance there; but as for making it a locality for a quarantine establishment, as for setting up a lazaretto capable of sheltering and feeding a large number of people, the Committee, independent of all other considerations, does not believe it would be possible. Nevertheless Perim remains the point, *par excellence*, where the necessary department could be organised for the search of ships, that is to say, the members of that department and the maritime force for the surveillance of the straits should be stationed there. We are supposing, let it be distinctly understood, that political convenience in this matter is in accord with sanitary convenience.

It would remain to discover the proper place for a quarantine establishment. The point which naturally presents itself is at a small distance from Perim, outside the straits, a little to the south-east of Cape Bab-el-Mandeb. There, on *terra firma*, we find a place easy of access, where date-trees flourish, and where very good water is known to exist. We may add that on these coasts, sheltered by the cape and the islands, there are suitable anchoring grounds for vessels. Could the necessary supplies for the individuals in quarantine, who would amount perhaps to several thousands, be procured with facility in this place? The Committee has no data on which to base a reply. As for the quarantine establishment in itself, the Committee understands that it ought to consist of a large guarded space, in which would be spread about, in a suitable manner, encampments suited to the habits of the pilgrims. It might be objected that, under such conditions and in such a climate, the pilgrims would suffer greatly; but the Committee would reply in anticipation of this objection, that the pilgrims in question are Malays and Indians, who consequently are habituated to all the heat of the torrid zone; and that the inconveniences would be most felt by the Europeans employed to see to the execution of the prescribed measures, inconveniences, however, which it would be possible to remedy by frequent changes in the staff.

Judging from these incomplete data, it is thought possible to institute at the entrance of the Red Sea a surveillance, the principal station of which would be the island of Perim, and also a lazaretto to which all contaminated arrivals should be sent, after search. At the

same time the Committee hastens to add that what is said here is simply an indication of the question, and that the matter must be taken into serious consideration on the spot.

The Committee thinks that it has been so far from solving the problem put before it, that it has asked itself whether, in the absence of the places it has just mentioned, there is not, beyond the straits, but in proximity to them, some other convenient locality for the lazaretto in question; for, in regard to search, it is of the greatest necessity that it should be effected off the entrance of the straits themselves, lest it might be eluded. Now, beyond the straits information is wanting. On the one hand, we have seen, on the Arabian coast, only Aden which is very distant; and on the other, on the African coast, only the French possession of Obokh, of which we do not possess sufficient information.

The Committee then endeavored to discover whether, in the absence of better localities, there was not in the Red Sea, as near as possible to the straits, an island containing the requisite conditions for the establishment in question. It considered in succession, in this point of view, the principal islands, which, after leaving the straits, appeared to be the best of among a considerable number of islets. After seeing that the large isle of Harnish, which was the first to present itself, possessed no resources; that the next, Jibel Toogur, although less barren, having a little water, some vegetation, and some good anchoring grounds, did not possess the required conditions, the Committee stopped at the island of *Kamaran*.

This island is situated quite close to the Arabian coast between Hodeidah and Loheia. In regard to water, provisions, and safety of anchorage, it unites all the desirable conditions. Its proximity to Yemen, by which it is assured of an easy supply of provisions, is a great advantage; but it is also a danger, in this sense, that it would be very difficult to avoid dangerous communications with the most peopled and best cultivated part of Arabia. Another disadvantage in Kamaran, as in every other island in the interior of the Red Sea, is that it would be very difficult to compel ships under suspicion to proceed there and prevent any infringement of rules in this respect.

The adoption of an islet in the Red Sea as a quarantine station always presupposes that obligatory search would be put into force at the mouth of the straits, and it would necessitate an escort, or at least health officers, on board infected ships to accompany them as far as the quarantine station; this, as may easily be seen, would prove a very complicated matter.

These various disadvantages have led the Committee to believe that it would be preferable, if the thing were possible, to place the quarantine establishment either at Bab-el-Mandeb, or at some place outside the straits.

2*nd.—What should be the character of this establishment?*—Assuming it to be capable of realisation, on whom should devolve the

duty of setting it up, of making it work, of maintaining it? Who should have its direction? It must be remembered that we are speaking of an institution which interests all Europe; which would necessitate great expenditure in setting it up and maintaining it; and which would require a large staff of officers, and the concurrence of a considerable military and naval force to ensure the execution of the prescribed measures. Where is the territorial Power capable of taking all these duties upon itself? It can certainly not be found upon the Arabian coast amongst the independent and hostile chiefs occupying it. Should the charge devolve, as proposed in Committee, on the Ottoman Government or the Egyptian Administration? But admitting the nominal authority of the Porte in these parts, is it thought that it, or Egypt by delegation, possesses suitable means of execution? How could the Porte impose upon all flags the obligation of submitting to the sanitary regulations? And what State, without a sufficient guarantee, would consent to subject its flag to such an obligation? And besides would it be just to allow such a heavy charge to be borne exclusively by the Ottoman Government? There is England indeed; but would England consent? And then would it not be very inconvenient to confide the key of the Red Sea to one Power alone?

All these disadvantages were discussed in Committee, which after serious and careful examination, arrived at the conclusion that the projected institution at the entrance of the Red Sea, in order to attain its object properly, ought to be of an international character; that it should be founded and maintained at the common charge of the Powers interested, and placed under the surveillance of a mixed Board in which a Delegate of each of these Powers should sit.

In connexion with this Board, one of the members of the Committee, Dr. Bykow, has expressed his opinion that the duty of the direction should devolve either upon the Board of Health at Constantinople, or that of Alexandria, which are in point of fact mixed Boards; but this opinion was not accepted, because it appeared to the Committee, that the surveillance of either of these Boards would be exercised at too great a distance to be of any effect.

The Committee therefore thinks that *the establishment in question should, as a sine quâ non condition, possess an international character.* It would remain for the Governments interested to come to a mutual understanding as to the form and extent of the intervention to be exercised by each. For instance, we can easily conceive that the Porte or the Egyptian Government might have its direction, but under the control and with the assistance of Europe.

This conclusion was adopted by all the members of the Committee then present except M. Bykow who voted against it, and M. Polak, who did not vote.

3rd.—In what cases, how, and by whom should these measures be applied?—It is natural to admit, always supposing the project in question to be capable of realisation, that the working of the institu-

tion should be determined by a special regulation, adapted to circumstances. The Committee, however, thinks it is able, in the meantime, to declare that, in its opinion, every ship entering the Red Sea ought to be subjected to search with the object of ascertaining the sanitary condition of the port of departure, or at any rate (for that would not always be possible) the sanitary condition of the vessel. According to the result of this search, the ship would be authorised by a *visa* to continue her voyage, or would be detained in quarantine, if the nature of the accidents on board, the crowding, the place of destination, or any other circumstance, made it appear that the free entrance of the vessel into the Red Sea was dangerous. As, in the idea of the Committee, this measure ought specially to have in view ships carrying pilgrims or such like other passengers, that is to say, really dangerous ships, it is of opinion that the regular mail packets, and, generally, ships offering certain specified guarantees, though they should however be compelled to submit to search, might be permitted to continue their voyage even in the event of the occurrence of choleraic accidents on condition of performing quarantine in a locality to be assigned for the purpose. Now, in order that such measures may be impartially executed, intelligence and firmness are desirable; it will strike everybody that their execution should not be confided to a single Power alone.

The Committee for this reason concludes that *the measures should be applied by virtue of an international regulation which should specify the cases, and be carried out under the control of the Governments interested.*

Definitively, as may have been seen, the very great importance of a sanitary establishment at the entrance of the Red Sea is incontestable; the physical possibility of making it work usefully is scarcely doubtful; but the practical solution of the problem implies the satisfaction of so many various interests, that it is to be feared it will never be afforded.

VII.

Question of the Pilgrimage to Mecca.

If the question of the institution of a sanitary service at the entrance of the Red Sea, with the object of preventing the introduction of cholera into the Hedjaz, is calculated to raise many difficulties, it is a reason the more for the Conference to insist upon measures adapted to diminish the chances of the outbreak of a choleraic epidemic amongst the assembled pilgrims, and specially to oppose obstacles to the importation of the disease into Egypt.

With this double object, we have to determine :—1*st*, the organisation of the sanitary service on the coast of the Red Sea; 2*nd*, the conditions to be exacted on departure and the precautions relative to the embarkation of the pilgrims; 3*rd*, the hygienic measures to be put into practice in the Hedjaz; 4*th*, what should be done in order to prevent the importation of cholera into that province; 5*th*, the

measures to be adopted against arrivals from the Hedjaz if cholera should manifest itself during the pilgrimage.

The Committee will express its opinion on each of these points in succession.

1*st.*—*Organisation of the sanitary service on the coast of the Red Sea.*—This organisation should comprise stations for physicians whose duty it should be to afford precise information on the sanitary condition of the country, to deliver and to *viser* bills of health, and to watch over the execution of the hygienic or other measures which may be prescribed; and moreover certain lazaretto stations specially devoted to the application of measures of quarantine.

The stations in the first class should include the principal ports and roadsteads of both coasts of the Red Sea. On the African side, besides Suez, of which we shall have to speak more at length, there are three principal ports where surveillance is indispensable, *viz.*, from north to south, Kosseir, Souakim, and Massowah.

The port of *Kosseir* is the roadstead of Kenneh; it is not accessible to large vessels, but it carries on a trade in cereals with the Arabian coast; and it is moreover very much frequented by the pilgrims, especially on their return. It has been calculated that in 1860 more than 5,000 of them returned from the holy places by this route. Its population amounts to about 3 or 4,000 souls. Water of good quality is not to be had except at a distance of more than a day's journey. An Egyptian sanitary physician is stationed at Kosseir; but it is admitted that, for want of resources, and on account of its proximity to the Nile, this locality is not adapted for a quarantine establishment. Here then we can only have a post of observation.

Souakim, much more to the south, opposite Gonfoudah, is the principal port of the Nubian provinces of Egypt; it communicates with Shendy and Khartum. The town of Souakim possesses from 6 to 8,000 inhabitants, and is built on an isle in the interior of a bay, receiving its supplies from El-Geyf, a neighbouring town on the mainland. Most of the pilgrims from the interior of Africa embark here. They are generally known under the designation of Takrouris. They are poor negroes, subsisting on what they can derive during the pilgrimage from the most painful and laborious work; their annual number has been estimated as ranging between 2 and 3,000. From Souakim, by means of barques, they attain the opposite coast, descending most often upon Hodeidah, whence they proceed by land, joining the caravans, to the places of pilgrimage. A sanitary service has existed at Souakim since its occupation by the Egyptian Government; but our colleague, Salem Bey, to whom we are indebted for these details, does not believe that the necessary conditions for a quarantine establishment can be found there.

Lastly comes, not far from the entrance of the Red Sea, the port of *Massowah*, the importance of which increases every day. Massowah, a port of Abyssinia and of a part of the interior of Africa, is in con-

nexion with India, and especially with the Arabian coast. The African pilgrims however generally prefer to return *viâ* Souakim. Be this as it may, Massowah ought to be the seat of a post of observation, against which nothing exists in opposition, since this locality is under the control of the Egyptian Government.

On the Arabian coast, where the points to be watched are much more numerous and where it would be so necessary to have a strongly organised service, the difficulties are much greater. In the first place, a part of this coast, inhabited by fierce and barbarous tribes, is entirely independent of the Ottoman Government; and then, in the Hedjaz itself, the centre of Islamism, the Porte is obliged to manage skilfully and cautiously in the face of a fanaticism hostile to all European interference. However, if there are difficulties to be overcome and if good management has to be carefully attended to in the Hedjaz, what passed in that province last year shows that it is not absolutely impossible to adopt measures for the improvement of the condition of the pilgrims, and even to organise on this coast a sanitary service answering to the object to be attained.

Jeddah, the principal port of the pilgrimage, presents itself as the important point where a sanitary service ought to be strongly organised. We need not revert to all that has already been said regarding the town of Jeddah, its population, its commerce, its resources, and its disadvantages; we will simply say that, in the opinion of the Committee, Jeddah does not possess the conditions requisite for a great quarantine station. Besides the impossibility of subjecting the pilgrims, impatient to proceed to the holy places, to serious measures of isolation, if Jeddah were closed against compromising arrivals, the debarkation of these latter might be effected without any obstacle in the other small ports on the coast, thus rendering useless the quarantine precautions that might have been taken. Moreover it must not be forgotten that all the pilgrims do not land at Jeddah, and those who come sometimes from a great distance in barques or small ships proceed along the coast, putting in at each port for supplies. It follows that, in closing Jeddah against choleraic arrivals, the introduction of the disease into the holy places by other routes would in no way be prevented, while at the same time very great difficulties of application would have to be struggled with. At the most, only a small lazaretto for exceptional cases could be established there.

But Jeddah ought to be the seat of a sanitary office, having the direction of all the measures to be adopted in the Hedjaz. This office, under the authority of the Porte, and assisted by a Board composed of the chief authorities of the town, would see to the execution of everything regarding the sanitary police of the pilgrimage, at the same time that it would collect and transmit precise information on the state of health of the Hedjaz and the neighbouring countries. The Jeddah office would necessarily keep up a constant communication with the functionaries charged with the duties of the sanitary police of the holy places.

Another station, under the immediate control of that of Jeddah, but having power to correspond directly, when asking for information, with Egypt, should be instituted at Yambo, a town containing 4 to 5,000 inhabitants, and an important roadstead, at which a certain number of pilgrims ordinarily embark on their return from Medina. This also would be a post of observation, for it would not be possible to establish a quarantine station there; and indeed, there is every reason to think, having regard to the hostile feelings of the populace, that the service at Yambo could not be worked except by Mussulmans, assisted by a considerable force.

The Committee thinks it would be very useful to establish a third post of observation on the coast of the Hedjaz, to the south of Jeddah, either at *Leeth* or *Gonfoudah* if it could be recognised that the presence of such a post was compatible with the conditions of security offered by these localities. But not possessing any sufficiently precise information upon the point, the Committee leaves the solution of the question to further consideration. Similarly in regard to the possibility of organising means of sufficient information respecting the sanitary condition of the more southerly localities, notably Hodeidah and Moka, where the pilgrims land, as has been seen above. We confine ourselves then to proposing, for the moment, the creation, on the coast of the Hedjaz, of two sanitary offices,—the principal one of which, assisted by a local Board, should be stationed at *Jeddah* and the other at *Yambo*.

We have now to occupy ourselves with *lazaretto* posts or offices.

With regard to this subject, the Committee deemed it advisable to establish what it thought an indispensable distinction. It does not admit that the place to which pilgrims infected with cholera may be admitted to perform quarantine should be the same as that where ordinary arrivals are to be, if deemed necessary, subjected to preventive measures. The danger in these two cases is not the same, and besides, the means of isolation which suffice for a small number of travellers are not applicable to such a multitude as that composing the pilgrimage.

Starting with this distinction, our idea, in the first place, after considering the localities, was to reserve to the pilgrims returning by sea three places where, in the event of cholera breaking out amongst them, they might be admitted to perform quarantine. These localities were, proceeding from south to north, *El-Wesch*, *Moilah*, and *Tor*. We supposed that the pilgrims embarked in the ports of the Hedjaz might be put down at these three points, where suitable accommodation and supplies would have been prepared for them. We thus maintained the principle—which we consider essential—of interrupting all maritime communication between Egypt and the Hedjaz, in the event of cholera prevailing amongst the pilgrims. But our colleague, Dr. Salem Bey, has stated to us that the Egyptian Government would not permit the pilgrims to perform quarantine in any place

closer to Egypt than El-Wesch; he has demonstrated to us, in fact, that beyond that place, at Moilah and Tor, for instance, secret communications of a nature very compromising to Egypt would occur, by reason of their proximity and the facilities of navigation by means of barques, while there would be no reason to apprehend the same danger on the other side of El-Wesch. The Committee, accepting these reasons, has abandoned Moilah, a locality provided with a port, and which could easily be supplied with provisions; and, as will be seen further on, it has reserved Tor for the ordinary lazaretto for choleraic arrivals.

There remains *El-Wesch*, which unites all the desirable conditions for a quarantine station: a large and safe port accessible to large ships, fresh water of excellent quality in abundance on the sea shore as well as in the neighbouring valleys, fresh provisions easily to be procured on the spot, without taking into account the resource of re-victualling by sea. El-Wesch is situated five days' march to the north of Yambo, and is under the authority of the Egyptian Government, which maintains a garrison there in a fort placed at some distance from the sea, on the road followed by the great Egyptian caravan, which usually halts at El-Wesch for several days to take in supplies, when the Arabs of the neighbourhood flock in with provisions of all sorts. Besides this resource, the fort is provided with stores of provisions for the use of the caravan. Thus we find El-Wesch offering the best conditions for the organisation of a lazaretto capable of holding several thousand people. This lazaretto should consist of a sort of encampment, the limits of which should be watched, and which should consist of tents and huts. El-Wesch should be adapted accordingly, that is to say, independently of the fort, which is too far in the interior: it would be necessary to construct, by the sea, dwellings for the sanitary officers and for a respectable armed force, and also depôts for a supply of tents and provisions for the use of the persons performing quarantine. The administration of the establishment should be confided to a Director assisted by several medical officers, and a number of agents sufficient for the working of such a service. At the season of the pilgrimage the whole of this staff should proceed to El-Wesch, where, in the interval, only the guard necessary for the protection of the stores should be retained, and would hold itself in readiness for the contingency of a quarantine to which to subject the pilgrims. On the accomplishment of the pilgrimage, the greater part of the staff would return to Egypt. The Committee does not think it necessary to enter into further details upon this subject: further on it will explain what, in its views, should be the true rôle of El-Wesch in regard to pilgrims infected with cholera.

The *lazaretto* assigned to ordinary choleraic arrivals, *viz.*, to ships not carrying pilgrims and similar passengers, would, the Committee thinks, be conveniently situated at Tor, a straggling village at the foot of Mount Sinai, provided with a good anchorage and an abundant supply of fresh water. Tor might easily be supplied with provisions

from Suez. This locality moreover possesses the advantage of being in the track of ships bound to Suez, which consequently would not be obliged to make any *détour* to reach it. The Committee thinks that every ship in which cholera manifests itself should be compelled to perform quarantine at Tor. The lazaretto to be established there ought to have, in the portion reserved for European travellers, a permanent organisation, and be provided with every thing necessary for the passengers frequenting the Indian mail steamers, though it is very probable, judging from past experience, that these travellers will very rarely have to perform quarantine. The Committee does not admit that, *in any case*, ships on board of which cholera manifests itself could be allowed to perform quarantine in the neighbourhood of Suez, at the *Wells of Moses* for instance. It believes that, even at the cost of certain disadvantages, we must not establish a lazaretto in the neighbourhood of Suez: in this neighbourhood, even at the *Wells of Moses*, it thinks there is an almost inevitable danger of compromising Egypt; for it must not be forgotten that the persons performing quarantine have generally very few scruples on this score; and that, on the other hand, in the East the sentiment of duty in subordinate employés cannot withstand certain temptations: so that, if it be desired to avoid the danger resulting from an infringement of the measures prescribed, it is not sufficient to give strict directions, it will be safest to have the quarantine performed in a place naturally isolated and situated at a respectable distance. This is the chief motive which has induced the Committee to select Tor in preference to any other places closer to Suez. And it follows that, in our opinion, Suez is the gate of Egypt which must be guarded with the greatest care, and that, so far from acting so as to attract cholera to that place by means of the great quarantine station which it has been proposed to establish there, we should endeavor, on the contrary, even at a sacrifice, to thrust the disease back and keep it as far away as possible; for we must not lose sight of the fact that, if the town of Suez is compromised, Egypt will inevitably be invaded.

Suez then is especially, in our eyes, a post of observation whence surveillance should be extended far and wide; and, for this reason, we think it would be well to make it the seat of the direction of the entire sanitary service of the Red Sea, inclusive of that of the straits.

In connection with this question, the Committee argued at length the question of the authority under which this department should be placed. In regard to that of Bab-el-Mandeb, we have laid it down that an international character was a *conditio sine quâ non*; for that of the coasts of the Red Sea, the necessity for such a condition does not at the first glance make itself apparent. We find ourselves here in the presence of territorial Powers: on the one hand, the Egyptian Government; on the other, for the Hedjaz, the Ottoman Porte. It would seem then very natural that the Porte and Egypt by the agency of the Boards of Health sitting at Constantinople and Alexandria, should each assume charge of that portion of the service properly belonging to each.

But what would result from this? Egypt, we may conceive, would accomplish her task easily enough. Urged on by the danger of which she has had experience, and working in proximity to her own territory, she would be quite capable of defending herself. This, however, is only one side of the question.

And the Hedjaz? No doubt the Ottoman Porte possesses an incontestable right to exercise supreme authority there, and clearly the measures to be adopted should be executed in the name of the Turkish Government. But is the Board of Health sitting at Constantinople in a favorable situation for watching over the execution of measures applicable in the Red Sea? Is it not too distant from the theatre of events to act as seasonably and promptly as would be necessary? What happened this year, when cholera broke out amongst the pilgrims, has caused us to perceive all the disadvantages of distance and difficulty of communications. Facts have shown us, moreover, the danger resulting from the application, by two authorities not on good terms with each other, of preventive measures whose efficacy depends on a complete understanding on all points. Thus, for instance, while the Egyptian administration, guided by past experience, had decided, in accordance with the wishes of the Conference, that contaminated arrivals from the Hedjaz should not be admitted to perform quarantine in Egypt, the Turkish authorities at Jeddah, acting in an opposite spirit, and more anxious to get rid of the pilgrims than for the preservation of Egypt, hastened their embarkation for that country in spite of the protests and remonstrances of the Egyptian Delegate.

How are the disastrous consequences of such want of accord to be prevented? It might be done by confiding the direction of the entire sanitary service of the coast of the Red Sea to the Egyptian Government. But would the Porte consent to give up its direct authority in favor of Egypt? And besides, the Egyptian direction could not, in any case, be admitted except with the concurrence of a mixed Commission, where all interests should be represented.

We have thought therefore, in the interest of that unity of action which is indispensable to success, that it would be convenient to confide the direction of the sanitary service of the whole coast of the Red Sea, including the Straits of Bab-el-Mandeb, to a *special* mixed Commission, in which each Power interested should be represented; which Commission would decide on all the measures to be taken on the coast, leaving at the same time, it should be understood, the executive power to the proper authorities.

Thus, in the idea of the Committee, the sanitary service to be organised on the coast of the Red Sea would comprise, in addition to the project of an international lazaretto with compulsory search at the Straits of Bab-el-Mandeb :—

1st.—*Stations for sanitary physicians, viz., three on the African coast, at Kosseir, Souakim, and Massowah; and two, temporarily, on*

the Arabian coast, the chief one being at Jeddah, and the other at Yambo ;

2nd.—Two lazarettos, one of which, that at El-Wesch, should be reserved exclusively for the pilgrims ; and the other, at Tor, should be the place of quarantine for ordinary choleraic arrivals ;

3rd.—A direction, sitting at Suez, assisted by an international Commission, which should decide all questions regarding the sanitary service of the Red Sea.

(Adopted unanimously, except by Salem Bey, who did not agree on some points).

2nd.—Conditions of departure, and precautions regarding the embarkation of the pilgrims.

The Mahomedan law, among other very wise prescriptions, requires that whoever undertakes the pilgrimage must have sufficient means for the journey, and to provide for the maintenance of his family during his absence. It is the practice of this precept which the Dutch Government has required of its Indian subjects, which we would wish to see equally in force in the British possessions, and everywhere. We are assured that arrangements have been made already in regard to the pilgrims in conformity with the law in Morocco, Tunis, and in Algeria, without doubt. The pilgrims, before being permitted to proceed on their journey, have to furnish proof that they are provided with a sufficient sum for it. The object of this measure, as we have said before, is to restrain mendicants from going on the pilgrimage, of which they are the sores, and who furnish the chief element for epidemics. Generally speaking, the Turks act up to the direction of the law, and they rarely undertake the journey to Mecca unprovided with the necessary funds. We are assured that this is the case in Egypt also, where the Government exacts guarantees from those who desire to proceed on the pilgrimage. Still we think it would be useful, in order to ensure a more general execution of the religious law, that the Turkish Government should fix, by rule, the obligation on each pilgrim to be provided with a *teskereh*, or passport, which should state that the intending hajji has complied with the prescriptions of the law, and without which he should not be permitted to start. But how apply such a measure to the unhappy Takrouris who come from the interior of Africa to embark at Souakim or Massowah, and who, if they generally suffer from misery, nevertheless earn their subsistence in the service of the other pilgrims ? This is a question which we recommend to the solicitude of the Egyptian Government.

We have nothing to say in regard to the caravan journey of the pilgrims ; its conditions are so well defined that we need do nothing more than recommend a strict application of the ancient customs.

As for the transport of the pilgrims by sea, it has down to the present day remained abandoned in all the Turkish and Egyptian ports to the greed of the most sordid and grasping speculation, and nothing

can give an idea of the frightful crowding by which for the most part this transport is attended. It is a matter of urgent necessity then to interfere here, in order that the embarkation of the pilgrims, on their departure as well as on their return, may be conducted under suitable conditions in every respect. With this object in view, we cannot do better than recommend the application of the English regulation (*see Annexure B*), with the few modifications we have noted, and to assign the duty to the sanitary office of the port of embarkation.

3rd.—Measures of hygiene to be put in practice in the places of pilgrimage.

The Sanitary Commission sent to the Hedjaz this year by the Ottoman Government has already—in conformity with the instructions received by it from the Superior Council of Health—hastened to take, in the localities devoted to the pilgrimage, certain immediate hygienic precautions, whose good effects have been felt. These precautions have chiefly consisted in causing the removal in advance of the filth which littered the streets of Mecca and other places of pilgrimage; the establishment of a slaughter-house outside the town; the removal to a distance from it of the trenches for the maceration of the hides; the establishment of a hospital containing 60 beds; the assigning of places of refuge to the mendicants who ordinarily swarmed in the great mosques and streets to the town; the removal of the filth from, and cleaning out of, the reservoirs of Arafat, whence the water for the drink and ablutions of the pilgrims was taken; the cleaning out of the conduits which bring drinking water to Mecca; the digging of 500 latrines scattered over various points of the valley of Mina, and spacious pits for the reception of the blood of the sacrificial beasts; and moreover the preparation, at a sufficiently great distance, of other pits for the burial of all refuse.

All these measures have been accomplished not only without resistance, but even with the concurrence of the authorities of Mecca. The results, we have said, have been satisfactory; and it has been stated that the mortality was very low this year during the pilgrimage. It was not till three weeks after the ceremonies and after the departure of the bulk of the pilgrims, that cholera showed itself among those who had lagged behind; and, in the Medina caravan, the circumstances occasioning its appearance are not properly known yet. However this may be, it is not doubtful that it is easy greatly to improve the sanitary condition of the pilgrimage, and consequently the fate of the pilgrims, without encountering any serious opposition from the latter.

It would be necessary then to methodise and perfect the measures adopted last year, and, with this object, to appoint a special department for the sanitary police of the holy places. The duty of organising this department should devolve upon the Ottoman Government.

The task of the Committee charged with the sanitary police would be to propose and cause to be executed all appropriate measures for lessening all the bad conditions attached to the pilgrimage.

Amongst these measures, already enumerated above, we believe that, considering the peculiar circumstances of the pilgrimage, it would be greatly necessary to take into consideration the means of assuring an abundant supply of drinking water to the pilgrims by means of a thorough repair and careful maintenance of the existing canals and reservoirs. We would also invite attention to the establishment of temporary latrines, by means of trenches, which should be filled in daily and disinfected, if possible, with quicklime; also to the care to be taken in immediately burying and disinfecting all the refuse of the sacrificial beasts; and to the position of the encampments outside the towns, so as to avoid crowding and its consequences. The Committee, moreover, would have to occupy itself with the succour to be afforded to the sick; and, in the event of the outbreak of an epidemic of cholera, the establishment of ambulances under tents, where cholera patients should be treated separately.

As in certain cases—and especially so in the event of an epidemic—a scarcity of provisions might arise, we are of opinion that it should be one of the duties of the Committee to see that a certain supply of cereals for urgent necessities should always be at hand in Mecca.

We shall not dilate further on the functions of the Sanitary Commission of the Hedjaz, which naturally would consist altogether of Mussulmans; these functions should be determined by special instructions, a specimen of which exists.

All these hygienic measures, assuming them to be properly applied, would no doubt result in the diminution of causes of sickness amongst the pilgrims; and, in the event of the outbreak of cholera, the diminution amongst them of the ravages of the epidemic. But we do not in any way pretend that their consequence would be altogether to protect the pilgrims from the attacks of the disease if imported amongst them, or the removal of the disastrous consequences which would result therefrom to Europe. They should not therefore in any way cause the prophylactic measures to be opposed to this danger to be lost sight of.

4th.—Are there any measures which should be adopted in the Hedjaz against the importation of cholera by land or sea?

In our opinion, on every occasion of the prevalence of cholera on the coast of the Red Sea at the time of the pilgrimage, it must be expected that, in spite of everything that may be done, it will almost infallibly invade the Hedjaz in the wake of the pilgrims. We have shown the reasons why before. Mecca being the point of concentration, the place to be attained, if its gates by way of Jeddah were closed by a quarantine, the contaminated pilgrims nevertheless would not fail to reach it by some other door. It is necessary then to bar the way by land against all arrivals from the coast of Yemen. Now, this does not seem to us to be practicable. Would it be less difficult to guarantee Mecca against the same arrivals coming *viâ* Taif? Or again, under another hypothesis which has not yet been verified by

experience, against a caravan tainted with cholera coming from the Persian Gulf across the more or less cultivated region of Nedjd, occupied by the Wahabees? We do not know: the consideration of the question must devolve upon the Sanitary Commission of the Hedjaz.

In the actual state of knowledge, the only thing we admit to be practicable is that the Hedjaz being uninfected, every contaminated ship showing herself off Jeddah should be subjected to measures of quarantine. No great result however must be expected. It would be well to select a convenient site in anticipation at Jeddah with this object in view. But an attempt to subject the mass of pilgrims suspected of cholera to measures of quarantine, to prevent them thereby from arriving at Mecca in time for the ceremonies when they are so close to their destination, would, in our opinion, only give rise to serious disturbances without resulting in any substantial advantage.

It will be seen that the Committee therefore places no dependence whatever on the measures which may be taken in the Hedjaz against the importation of cholera amongst the pilgrims.

5th.—Measures to be taken against arrivals from the Hedjaz, if cholera should manifest itself during the pilgrimage.

Our task, in regard to this serious question, has been greatly facilitated by the long discussions to which it gave rise. We have had to consider whether the provisional solution of it then given by the Conference still remained the best which could be afforded of the difficult problem of preventing the importation of cholera into Egypt by the pilgrims returning from the Hedjaz, or if a profound consideration of the question and the experience acquired during the year would not require some modifications in the measures adopted in haste for the time being.

This examination led us to the full conviction that, to attain the object, it was essential to maintain in its integrity the fundamental principle laid down by the Conference, *viz.*, *the temporary interruption of all maritime communication between the Arabian ports and the Egyptian coast*, admitting at the same time an important modification in the practical execution of the measure.

But, first of all, let us state the terms of the problem to be solved. The question is to guarantee Egypt, and consequently Europe, against the importation of cholera. Nobody can dispute the importance of the object to be attained, who considers the disastrous results to human life as well as to commerce which we have now been witnessing for a year and the term of which cannot be assigned: results which are solely the consequence of the importation of cholera last year across Egypt. It will be agreed that, to attain such an important object, no possible precaution must be neglected, even though it should entail certain sacrifices. But, as will be seen, the necessary sacrifices are not very great.

In the event of an outbreak of cholera during the pilgrimage, the danger, it is known, is in the irruption into Egypt of the contaminated masses on whom it is vainly desired to impose measures of quarantine on Egyptian soil; for, in such cases, the isolation, which can be guaranteed only by cordons and strict orders, would be completely illusory against such masses and in such conditions. The only thing that can be regarded as a serious guarantee is isolation at a great distance from the place desired to be preserved, the guarantee resulting from the mere fact alone of the space to be got over.

The Egyptian Government which, with reference to this subject, knows what is to be depended upon, is entirely in accord with us on this point, as is seen by the statements made to the Committee by Dr. Salem Bey.

Thus, then, there must be no quarantine applicable to the pilgrims returning from the Hedjaz on the entire Egyptian coast, including Massowah, unless under the penalty of seeing cholera invade Egypt with them. The consequence is that, if it is desired to preserve Egypt and Europe from another invasion from this direction, it is absolutely necessary to maintain the principle of the temporary interruption of maritime communications, as has been said above.

Let us now consider what would be the consequence of this interruption, and see what, in this case, should be the conduct to be maintained in regard to the pilgrims.

Let us remark, in the first place, that the measure would apply only to pilgrims returning by sea to Egypt, the great mass of whom would ordinarily land at Suez. The number of pilgrims thus returning varies in different years, but it may be estimated as ranging between 10 and 20 thousand, say 25,000 at the outside, including the negroes who return *viâ* Souakim and Massowah. We may add that in ordinary seasons all the pilgrims do not embark, on their return, at the same time; that immediately after the ceremonies a first batch proceeds to Jeddah and embarks on steamers bound to Suez. This batch consists of two or three thousand persons who all start at the same time. After having left their human cargo at Suez, the vessels return at once to Jeddah for another supply. In the meantime the pilgrims continue arriving from Mecca, those proceeding to Egypt, as well as those for India and the Persian Gulf; and they accumulate at Jeddah waiting for an opportunity to embark. Generally the first clearing-out of the bulk of the pilgrims who proceed to Suez takes from fifteen days to three weeks. But all is not over. There yet remains part of the pilgrims who, after having assisted at the ceremonies of Aarafat, proceed to visit Medina. The majority of these are Indians and Javanese, with Takrouri negroes, and they also contain a certain number of pilgrims who propose to return to Egypt by sea. All these pilgrims for Medina leave Mecca in caravans some days after the ceremonies; and, after a journey which lasts for about 25 days, those amongst them who have to take the sea route arrive at

Yambo for the purpose of embarking. This year the pilgrims who went in this way to Medina amounted to between 15 and 18,000, of whom about 6,000 returned to Yambo: of these last, 3,000 were bound to Suez. It was chiefly in this fraction of the pilgrimage that cholera raged towards the end of May on the return to Medina.

These details have their importance: they show us that the return of the bulk of the pilgrims by sea to Egypt is effected at two different times—the one separated from the other by an interval of nearly a month; that the most pressed for time, those who dispense with the journey to Medina, return quickest to embark at Jeddah; that this first evacuation, which is effected in two or three weeks, comprises the greater number of the pilgrims who return *viâ* Suez,—those consequently who are of greatest interest in our point of view; that the second occasion of the return by sea is at Yambo, and comprises a smaller number of persons bound to Suez than the former. These circumstances ought to be taken into consideration.

Let us now see what happened this year when cholera appeared among the pilgrims. It is known that the religious ceremonies terminated without the manifestation of any indication of cholera, and that even the return of the first batch from Jeddah was accomplished without the occurrence of anything suspicious: so much so indeed that the pilgrims in this first batch were admitted to pratique at Suez. The starting point of the epidemic which afterwards broke out has not yet been determined; it would even seem, judging from information received, that the disease broke out almost simultaneously at Jeddah, Mecca, and in the Medina caravan. But it is certain that the latter was the greatest sufferer. The pilgrims were few in number at Jeddah and Mecca, and the number of cases therefore was inconsiderable.

Cholera broke out on the 23rd May amongst the pilgrims who were proceeding to Yambo, on their return from Medina, with the object of embarking. These pilgrims, joined to those who were already at Yambo, formed a total of about 6,000, half of whom at least were destined for Suez. The development of the epidemic amongst them was very rapid, and the town also was soon invaded by cholera. A period of confusion then ensued. The famished pilgrims demanded food and tried to embark by force. The town, on the other hand, had neither provisions nor garrison; and when the Egyptian medical officer, faithful to his instructions, attempted to oppose their embarkation, he found himself without the necessary support, and his personal safety even was endangered. On the arrival at Yambo, on the 6th June, of the medical officers despatched with provisions, they found the town in an indescribable state of crowding, filth, and destitution. The pilgrims were still threatening, and much trouble was experienced in delaying their embarkation till the 9th, in order to give time to advise the Egyptian authorities of their arrival. The most important fact to note is that, notwithstanding the most horrible condition in which these pilgrims and the population

of Yambo were situated, the cholera, after a rapid development, died out altogether in the assemblage by the 5th June. The epidemic had raged altogether for twelve days, carrying off in that time 335 victims, out of a mass of 10 or 12,000 souls. This result should tranquillize those who imagine that under such conditions the ravages of cholera are unlimited, and it also confirms the theory announced by the Conference. The rest is known: the pilgrims in question were not admitted into Suez; they were sent to perform quarantine at Tor.

Thus, from the facts observed this year, we can easily calculate the consequences of the interruption of maritime communication with Egypt, if cholera should manifest itself in the mass of the pilgrims, instead of breaking out only in a fraction of the pilgrimage. What happened at Yambo would happen then at Jeddah on a large scale. The pilgrims would flock into the town; they would try to embark at any cost; and if there were ships in the port and no military force present to hold the pilgrims in respect, there can be no doubt they would take the ships by assault and abandon themselves to violence against the inhabitants. This would happen especially if we should suppose—and the hypothesis is quite admissible—that a scarcity of food ensued.

To avert these dangers then, it is absolutely necessary to maintain at Jeddah and Yambo a land force capable of maintaining order, and a naval force to oppose attempts at embarkation by force; it would, moreover, be necessary to maintain a supply of provisions in anticipation, to provide against the possibility of scarcity. This done, we believe it would be to the advantage of the pilgrims to wait for the termination of the epidemic on the spot, that is to say, in appropriate encampments or to proceed with the caravan returning by land, rather than that they should be embarked and perform quarantine in some other place; we think consequently that it would be well to use persuasion in acting thus with them.

But the Committee thoroughly understands that what is best is not always the most easy of realisation. It knows that an ignorant and terror-stricken crowd is not easily persuaded; it knows also, by the experience of this year, that the concurrence of the local authorities in retaining the pilgrims must not be greatly depended upon; and that, on the contrary, they would be glad to hasten their departure as much as possible.

Taking these things into consideration, and also considering the repugnance of the Ottoman Government to retain the pilgrims in the Hedjaz against their own wishes, the Committee thinks that the way to reconcile all exigencies would be to assign the port of El-Wesch as a place of quarantine for those who might wish to embark. We have mentioned above how they would find in that place an establishment for their reception; and they should not definitively leave it for Egypt, until after the extinction of cholera amongst them.

In this way, we should avoid the peril of great crowding at Jeddah in the first place, for the first section of the returning pilgrims, and later at Yambo. By this system, El-Wesch would, therefore, be a real *diverticulum*, where, without any danger of compromising Egypt, the pilgrims would wait for convenient circumstances.

It should not be lost sight of that the number of pilgrims thus transported from Jeddah to El-Wesch, in several successive voyages—as is done in going to Suez—would not exceed 8 or 10,000 at the outside, and that, after the arrival of those from Yambo, the first would probably have accomplished their disinfection and would have already left.

We may add that the caravan for Egypt would also come to El-Wesch, but would stop at a certain distance in the interior, and that, in the event of its still showing any indications of cholera, it would be detained there for the time necessary to accomplish its purification.

We have foreseen the exceptional case where, by reason of an unusual gathering, there would be ground to fear overcrowding or a scarcity of means of quarantine at El-Wesch. The Committee believes that, in this case, it would be convenient to delay the march of the caravan and to station it at Yambo-el-Nakhel, a fertile and well watered valley, at a distance of six hours' journey from the town, where it would be easy to supply the caravan with provisions, assuming, as we have said above, that a supply was kept in anticipation at Yambo.

What would happen to the other pilgrims those returning to their homes by land as well as by sea? The first would not be in any way inconvenienced by the measure in question, which would at the most augment the contingent of the caravans in proportion to the available means of transport, and it may be supposed that, the sea route remaining open, very few of those pilgrims who had the intention of proceeding that way would join those following the land route. Be this as it may, the caravans would be in no way disturbed in their itinerary. Only by way of precaution, that of Egypt, which ordinarily contains from 6 to 12,000 persons, would remain at El-Wesch for the time required for its purification, if cholera should not have died out in it, and, if overcrowding or a scarcity of provisions were to be feared at El-Wesch, it might even, altogether or in part, be stopped for some time at Yambo-el-Nakhel. The Damascus caravan would continue its route as far as the place where it is ordinarily subjected to a medical visit to take note of its sanitary condition. The other caravans which return to the south of the Peninsula, or proceed to the east and north-east, would be exempt from all surveillance.

As for the Indian, Malay, Japanese, Persian, and other pilgrims who have to return to their homes by sea, if they are permitted to embark, provided their destination be not the Egyptian coast, it is clear they must be allowed to re-embark, in any state of things,

either at Jeddah or Yambo, at their own risk and peril, and at the mercy of the speculators who victimise them. Only, we ask, in the name of humanity, that the authorities, from whose territories these pilgrims come, should exact that their embarkation should not take place except under the conditions prescribed by the *English Regulation* (The Native Passengers' Act).

The necessary consequence of the system we propose is that, during the whole period of prohibition, no arrivals from the Arabian coast would be permitted to perform quarantine on the Egyptian coast, either at Suez, Kosseir, Souakim, or Massowah, and that any body infringing the rules would be repulsed with every proper and humane precaution, but with the greatest strictness.

It is possible that the measures of which we speak may somewhat disturb the calculations of the ship-owners and charterers who derive such large profit from the pilgrimage to Mecca; that, for instance, they will protest against the prejudice to their trade occasioned by the measure prohibiting them from conveying pilgrims direct from Jeddah to Suez, or any other Egyptian port; that they will pretend that this interdiction is an attack upon free trade ;—perhaps they will even have the audacity to protest in the name of humanity and the interests of the pilgrims! We know to what extent the tenderness of speculation can reach! But we can assure the charitable souls who may employ this language, that we care a great deal more than they do for the true interests of the pilgrims, though we do not forget at the same time that our mission is to save Europe. As for mercantile pretensions, as for the right to freely import cholera wherever interest and speculation may require,—besides that such pretensions are odious, we maintain that they are founded upon a false appreciation of the true interests of commerce, which, when considered as a whole, and not from a limited point of view, are quite in harmony with those of the public health; so that altogether, if these objections are urged, we think that it would be easy to give a fitting reply to them in every point of view.

To sum up, the Committee is of opinion that, *in the event of cholera showing itself in the Hedjaz at the time of the pilgrimage, it would be proper to interrupt temporarily, viz., during the existence of the epidemic, all maritime communication between the Arabian ports and the Egyptian seaboard.*

The suitable application of this measure supposes the existence of a sanitary service organised on the coast of the Red Sea, as has been shown before, and also the presence of a sufficient military force, as well to maintain order among the pilgrims as for the maritime police. In this latter point of view it would be desirable if the Governments interested were to come to a mutual understanding in order to ensure the execution of the prescribed measures.

This being so, the Committee thinks that the execution of the measures might be proceeded with as follows, with such modifications,

as, *without affecting the fundamental principle of the measure*, might be deemed, by the International Commission sitting at Suez, adapted to facilitate its application :—

1*st.*—In the event of cholera breaking out amongst the pilgrims, the sanitary physicians in the Hedjaz should report the fact to the local authorities, as well as to the men of war stationed off Jeddah and Yambo. Moreover, while noting the fact on the bills of health, they should send advice of it to Egypt and El-Wesch.

2*nd.*—On the receipt of the declaration from the abovementioned physicians, the authorities should inform the pilgrims that those amongst them who might wish to embark for Egypt would have to perform quarantine at El-Wesch before being allowed to land in that country, and they should warn them at the same time that they were at liberty to take the land route.

3*rd.*—The embarkation should be effected under the direction of the sanitary authorities under the conditions determined and in the port assigned by them.

4*th.*—The men of war should assist in ensuring the execution of the prescribed measures; they should act as sea-police, and should keep as strict watch as possible in order to prevent clandestine departures.

5*th.*—On the receipt of advice of the presence of cholera amongst the pilgrims, the Egyptian sanitary authorities should bar entrance into all the Egyptian ports of all arrivals from the Arabian coast, and should send back all delinquent ships, after having furnished them, if necessary, with supplies, to a place on the Arabian coast, El-Wesch or elsewhere, to perform quarantine conformably to the rules adopted.

6*th.*—The pilgrims conveyed to El-Wesch should be kept there in quarantine, and should not be allowed to start again for Egypt until after ten full days subsequent to the disappearance of cholera amongst them, and the disinfection of their clothes and baggage. On leaving El-Wesch the ships carrying them—that is, those bound to Suez—should be obliged to touch at Tor, where they should be subjected to observation for 24 hours, and to a medical visit with a view to ascertain their sanitary condition. A clean bill of health and permission to continue their journey should not be given unless the sanitary condition of a vessel is admitted to be free from danger.

7*th.*—The caravan for Egypt should *halt at its usual* station, near El-Wesch; there it should be subjected to a medical visit, and it should not be permitted to continue its route until after having been free from cholera for 10 days.

8*th.*—As for the pilgrims bound to India and other countries on the further side of the Red Sea, they should be at liberty to embark for their homes, but they should be made, in doing so, to submit to the rules prescribed by the sanitary authorities of the port of embarkation.

9*th.*—Maritime communications between the Hedjaz and Egypt should not be re-established until ten days at least after the cessation

of every indication of cholera in the Hedjaz, officially declared by the sanitary authorities of Jeddah. But then, and indeed always, ships carrying pilgrims bound to Suez should be obliged to touch at Tor, and stay there for 24 hours, and be subjected to a medical visit, as said above. The sanitary authorities of Suez, would be at liberty to send back to Tor every ship not complying with this formality.

10*th*.—The penalties incurred for all infractions of the prescribed measures should be prescribed and regulated by the International Commission. The English Regulation (the Native Passengers' Act) would be an excellent model to follow on this head.

(Adopted unanimously, with the exception of Dr. Salem Bey, who differed in some points).

VIII.

Measures to be adopted in the event of cholera breaking out in Egypt.

Supposing that, in spite of all the precautions taken, or on account of the want of suitable precautions, cholera should manifest itself in Egypt, we ask:—What in this case is to be done in order to preserve Europe? It may be answered that then the measures generally put in force against cholera would be applied to Egyptian arrivals. But this reply, rational as it is, only partially satisfies us. We believe that, in depending upon the working of the said measures, Europe would run great risk of being invaded by cholera from one point or another, and it is known that then, whatever might be done, it would be difficult to arrest the generalisation of the disease. Egypt is, so far as concerns cholera coming from the Red Sea, a real defile, through which the disease must necessarily pass in order to penetrate into Europe; but it is a defile on leaving which an immense radiation takes place by the considerable maritime relations with the basin of the Mediterranean. As a defile, as a gate to be passed through, Egypt presents a natural obstacle which may be put to profit by concentrating the means of action there, while, if we content ourselves with opposing here and there the morbific radiation which proceeds from that country, it is sufficient to have one weak point in our defence against such a subtle enemy as cholera to make Europe lose all the benefit of the measures generally adopted. Let any one point on the Asiatic or European coast be carelessly watched, let an unfaithful or negligent agent permit any infringement of rules, and the entire economy of your defensive system is destroyed. Some countries, in an exceptional position, may still be able to defend themselves, but the greater portion of the Continent will not escape invasion by the disease.

All Europe then is as one with regard to this question, whether in a commercial or sanitary point of view. The negligence or improvidence of one country will fall upon all.

Now, if it is easier to defend ourselves against an invading enemy by closing the narrow door through which he must necessarily pass

than by meeting him in the open field, each separately on his own account, it is clear that it is most desirable and that it is a matter of common interest that the door of exit of Egypt should be closed against cholera. In a sanitary point of view there is no doubt upon this head.

Let us assume that, instructed by the experience of last year, and impressed, as we are, with the certainty almost of preserving Europe by placing obstacles in the way of cholera leaving Egypt, the European Governments decide on interruptiug, during the existence of the choleraic epidemic, all maritime communications with that country by means of a blockade, and let us see what would happen.

In Egypt the epidemic would follow its course, and would carry off no more and no fewer victims than if the door leading to Europe had been left open to emigration. Experience has shown how unfounded are the apprehensions that, in such a case, a prolongation of the ravages of the epidemic may ensue. And, moreover, the obstacle to maritime emigration would in no way prevent the inhabitants from spreading themselves about in Egypt herself: desert spaces and means of encampment are not wanting. In all probability, the epidemic would have passed through all its phases, and become extinct in two months; for, in these hot climates, choleraic epidemics march much more rapidly than in Europe. We should have to reckon then about two months of interruption of maritime communication between Egypt and the basin of the Mediterranean. It need not be said that this interruption would not apply to certain urgent communications, which might be effected without danger with the indispensible precautions.

Thus, it is clearly evident that if, by such an interruption, we should succeed in preserving Europe from invasion by cholera,—even though Egypt might have to suffer a little more, which we do not believe,—we should have rendered a great service to humanity.

"But," it will be said, "consider the immense interests of commerce, the transit to India through Egypt, the Suez Canal? Do you think that so many interests of the highest order will be reconciled to such an interruption, and allow it to be realised?" We admit freely that these great interests will look at the measure with an evil eye, and we have not the least doubt in the world that they are powerful enough to prove obstacles to it. But the question for us is not that: we are simply bound to show that the interests of all the trade of Europe, rightly understood, even those of the communications with India, would not be opposed to the temporary interruption of communications between Europe and Egypt if the result of that interruption were to be to guarantee Europe against invasion by cholera.

And in the first place, let it be seriously considered that, in admitting the practical execution of the various measures we have pro-

posed for the Red Sea, it is to be believed that the contingency supposed by us will never arise and that, if it does, there will only be a choice between two evils, either the damage limited to the temporary interruption of communications with Egypt, or the immense damage caused by an almost certain invasion of Europe by cholera. Now, putting aside the question of humanity for the moment, let commerce take the trouble of reckoning up, of putting into figures the one and the other damage, and see to which side the balance would incline. We ask whether, everything being taken into account, commerce in general, even the powerful companies possessing the privilege of rapid communications with India, would not perceive, as we do, that the damage which has been inflicted upon them for more than a year past in consequence of the importation of cholera through Egypt,—damage which does not appear to have terminated yet—is not greatly in excess of all that might result from the interruption under mention?

This, in our eyes, is the position of the question in the commercial point of view.

Though, to our thinking, the reply is not uncertain, especially if it be given also in the humanitarian point of view, we content ourselves with laying down the question, inviting to it the solicitude of the Governments we represent.

The question to be solved should be framed thus:—*In the event of an epidemic of cholera, coming from the Red Sea, breaking out in Egypt,—Europe and Turkey being otherwise unaffected,—would it not be proper to put a temporary stop to maritime communications between Egypt and the entire basin of the Mediterranean?*

(Adopted unanimously, with the exception of Dr. Salem Bey.)

B.—Measures against the importation of Cholera from India into Europe by Sea.

We have here in the first place to consider Persia in connection with the means, the application of which is conceived, of guaranteeing that country against cholera coming from India, and with regard to the measures which might there restrain the development of choleraic epidemics. Then we shall have to examine the precautions which will have to be taken by Turkey and Russia in order to preserve themselves from invasion by the cholera prevailing in Persia or the neighbouring countries.

IX.

Measures to be taken in Persia; organisation of a sanitary system; precautions in regard to pilgrimage; the conveyance of corpses, &c.

It has been seen by what routes cholera penetrated into Persia, how, to the north-east, Herat was in some sort of necessity the door through which cholera leaving India, and coming through Affghanistan by Candahar or Cabul, reached Meshed and thence

spread itself over the entire face of the country. We have shown that if the strategic importance of the position of Herat were no less great in the point of view of cholera than in a military point of view, it would unhappily have to be taken into account that Persia, which moreover does not hold possession of Herat, had not sufficient means of action to protect the town of Meshed on this side. We can, therefore, only bring to notice the importance of this strategic point without dilating further upon it.

Once cholera reaches Meshed, the important pilgrimage of which that town is the theatre, becomes, as in India, the chief sustenance and principal cause of the propagation of the disease. To this must be added the numerous commercial relations of which the town is the centre. But the pilgrimage which is most interesting to the question with which we are occupied, as well on account of the number of individuals composing it, and the peculiar circumstances it presents, as because it is a frequent cause of the importation of cholera into Turkey, is that which takes place at Kerbelah and other places in the vicinity of Bagdad, which are held in peculiar veneration by the Sheahs. This pilgrimage is performed during the whole year; but the great assemblage takes place especially during the month of Mohurrum. At that period the number of Persian pilgrims who assemble in the environs of Bagdad sometimes exceeds sixty thousand. They congregate from all the provinces of Persia in caravans which, for the most part, converge at Kermanshah, a town situated at a little distance from the Ottoman frontier, so that the bulk of the pilgrims arrive from that direction. The greatest number pass the frontier at Khaneguin, others in the vicinity of Mendeli, others again near Suleimanieh. A smaller number from the southern provinces come in by Mohammerah; and lastly, the smallest number, composed specially of Indian pilgrims, take the sea route and land at Bassora.

This pilgrimage then produces in Persia every year, towards the month of Mohurrum, a great converging movement of caravans towards Mesopotamia, and later a contrary movement; so that, in one way or another, these caravans are, in Persia as well as in Mesopotamia, the propagating agents, *par excellence*, of cholera.

A particular circumstance, which adds to the disadvantages of this pilgrimage, is that the Persians have the custom of carrying with them the remains of their relatives and friends, in order to afford them sepulture near the tombs of the great Imams held in veneration by the Sheahs. These human remains, exhumed in various stages of decomposition, are enveloped in felt, placed in sacks, in panniers, and sometimes in chests and slung across the backs of horses or camels. All these exhale an infected odour. But the worst is that the corpses of those who die on the road are added to the others, so that the nearer a caravan approaches its destination the richer it becomes in putrefying corpses; and if the mortality is at all considerable, which is not rare, these caravans resemble moving charnel-houses, spreading fœtid exhalations to a great distance around. It has been said in the

General Report that, when the Persian pilgrims arrived at Kerbelah free from cholera, it was not observed that the corpses they carried with them had originated cholera amongst them, so that it could not be said that it was seen that they were a generating cause of the disease; but, on the other hand, it seems to be clearly established that the putrid miasma exhaled from the corpses is an aggravating circumstance when cholera prevails during the pilgrimage.

From these details, added to those afforded relative to the frequency of epidemics of cholera in Persia, we think it is evident that, in Persia, quite as well as in India, pilgrimages are a principal cause of the development and propagation of cholera; and we conclude from this that if, in the actual state of things, it be not in the power of the Persian Government to secure itself against the importation of cholera from India, by sea or by land, it is at any rate permitted to it to make some efforts to diminish extension of the disease on its own territory.

We estimate that, with this object in view, it is absolutely necessary, in the first place, to institute in Persia a sanitary system organised on the model of that working in the Turkish Empire, *viz.*, composed of a central administration supported by a Board of Health, half of it consisting of Europeans, and having under its direction sanitary offices scattered over all the important points of the country.

Amongst the localities in which it appears to us that it would be of great importance to have a sanitary office provided with a special medical officer, we place in the first rank Meshed, Kermanshah, and Tauris. The town of Meshed, as a centre of commerce and pilgrimage, and by its position, is peculiarly exposed to the invasion of cholera from Affghanistan.

If Persia could with safety maintain a sanitary physician at Herat, we would recommend her to do so on account of the extreme importance of that locality, which is the door for cholera. This should be a post of observation.

We point out Kermanshah as the rendezvous to which converge the greater number of the pilgrim caravans bound to Kerbelah, and Tauris as the commercial centre for all Persian produce, and whence two great roads diverge, one leading to the Russian trans-Caucasian provinces, and the other to the Ottoman territory.

The functions of these principal offices, which might have a number of secondary posts subordinate to them, should in the first place be to collect precise information on the sanitary state of the country; but their special object should be the sanitary police of the pilgrims and generally of all the caravans.

If the Persian Government thought it could organize a system capable of defending the country against the importation of cholera by sea, it is needless to say that we should applaud the establishment of a suitable sanitary service on the coast of the Gulf, notably at Bender-Abbas, in concurrence with the Imam of Muscat, at Bender-Bushire, and at Mohammerah.

As for the Persian pilgrimages, it seems to us that all the hygienic and other measures we have approved for India would be equally applicable in Persia; we even believe that the application of the most important of those we have recommended would be greatly more easy. Thus, for instance, the suspension or suppression of all pilgrimage in time of cholera would without doubt be the most efficacious of all these measures. In India there might perhaps be insuperable obstacles to this; but in Persia it would not be so, according to our colleague, Dr. Polak, who has informed us that the Shah of Persia has twice already forbidden pilgrimage under similar circumstances. We believe, therefore, that such a prohibition ought to be the rule in times of epidemics of cholera. We believe also that the system of *teskerehs* or pilgrim passports, delivered only to those possessing the means of performing the journey, ought to be put in force in Persia.

Regarding the exhumation and transport of corpses, it does not seem to the minds of the Committee that such a custom, bound up as it is with accepted and respected traditions, can be imperiously suppressed, in spite of the fatal results attaching to it; but we are persuaded that it would be possible to the Persian Government to render the custom inoffensive by certain simple precautions, *viz.*, 1*st*, not by permitting the exhumation and transport of corpses except during the three winter months, a rule which exists but has fallen into desuetude; 2*nd*, by requiring that the corpses, fresh or putrefied, should be embalmed by means of disinfecting substances, amongst which we would note the bituminous matter to be found in abundance in the country through which the caravans pass on their way to Kerbelah; 3*rd*, by requiring also that these corpses, thus embalmed, should be enclosed hermetically in metallic cases, in tin for instance, which can be had at a moderate price in Persia. We should wish the authorities to oppose the transport of the corpse of any recently deceased persons unless these precautions have been used.

Thus, in our opinion, Persia would not have to undertake any great works of sanitation, for except to the south on the borders of the Gulf, and to the north, on the shores of the Caspian Sea, the country is generally healthy; but it has great need of a sanitary organisation, the object of which should specially be measures of hygiene and police applied to pilgrimages and arrivals by sea. In doing this, Persia would be the first to reap the chief advantages, inasmuch as she would most undoubtedly be less ravaged by cholera; and then she would be justly entitled to the gratitude of her neighbours and of all Europe, which, in consequence of these measures, would run much less risk of being invaded by the scourge.

X.

Measures to be adopted on the Turco-Persian Frontier.

The object of these measures should be to guarantee the Ottoman territory against cholera coming from Persia by land, or by the Persian Gulf. It has been seen that, with this object in view, a line

of defence, more or less well organised already exists, from Bassorah and even from Faô, at the mouth of the Shatt-el-Arab, to Bayazid to the north, the line being prolonged, marching with the Russian frontier, as far as Batoum on the Black Sea, in case the trans-Caucasian provinces should be invaded.

Sanitary posts exist along the whole of this line, which we shall enumerate, proceeding from north to south.

First, *Batoum*, of which we have just spoken and which watches arrivals by sea as well as by land from the trans-Caucasian provinces, next *Ardahan* and *Karvs*, which command the principal roads leading from the same provinces. Each of these posts is the residence of a sanitary medical officer, and may, at need, without much difficulty—considering the small number of practicable roads—intercept the greater part of the communications between the one country and the other.

The Turco-Persian line commences at Bayazid, at the foot of Mount Ararat, in that bastion-like prolongation of the Ottoman territory on the Persian side. There, as we have already said, passes the great road leading from Tauris to Trebizond. At the same time, however, this road does not pass through Bayazid, but leaves it at four hours' march to the right, and leads through a passage near the frontier, at *Kizzil-Diza*, where there is a great lazaretto, where travellers and caravans coming from Persia perform quarantine, when necessary. This lazaretto should be completed in more than one respect for the security of the country and the accommodation of the persons in quarantine. To this post is attached a physician and a complete staff for the work.

More to the south, and on a road which also leads to Tauris, passing by Khoi, is the sanitary office of *Kotur*, the residence of a medical officer. This office is placed at the extreme limit of the Ottoman territory, 18 hours' march to the East of Van, and, considering the absence of a lazaretto, is rather a post of observation, and, at need of repulsion, than a quarantine station. In case of need, however, it would be possible to make some provisional arrangement there. In the space lying between Kizzil-Diza and Kotur offices are stationed to watch the frontier, which, on occasion, are assisted by mounted patrols.

All these offices or sanitary posts, which have just been enumerated, are under the control of a central office at Erzeroum, where a medical inspector of the whole department resides.

On this part of the frontier, as is evident, the elements exist of an organisation, still imperfect no doubt, but which may be brought to perfection and rendered realy efficacious by means of a small but judicious expenditure.

To the south of Kotur, descending as far as Revendouz and Khoi, Sanjak, we find the worst guarded part of the line, a part where, at certain points, there is even no watch at all. But it must be said that this part of the frontier corresponds to a very mountainous region in-

habited by Kurd shepherds who are almost entirely independent and pay very little respect to territorial limits, passing from one country into the other without scruple according to the requirements of their flocks. It can be easily conceived that under such conditions, sanitary surveillance cannot easily be organised. By way of compensation, on account of the difficulty of access and the little communication of this group of mountains with the neighbouring provinces, cholera has no tendency to traverse this region. It is in the southern part from Suleimanieh and Revendouz, that we have seen it this year for the first time reach Persia by Saouk Boulak.

The first sanitary post of the southern portion of the line is at Revendouz, or rather at some hours' march to the east of the town, in a defile of the road, which leads across the mountains from Mosul to Persia. This passage was evidently very badly guarded this year, since cholera cleared it.

Advancing towards the south, we meet with the most important posts of this frontier, *Suleimanieh, Khaneguin,* and *Mendeli:* the two last especially situated on the roads followed by the great majority of the Persian pilgrims. These three posts are occupied by sanitary physicians, who, as well as the whole department of the provinces, comprising that of Bassorah, are under the control of the central office at Bagdad, where an inspector-general resides.

After all that has been said regarding the importation of cholera into Bagdad by this part of the frontier, it must be admitted that if this department can give good information regarding the invasions prevailing in this direction, it has hitherto been powerless to protect the Ottoman territory from invasion by cholera. This powerlessness is owing to various causes; the extreme difficulty of guarding such an extended frontier, the insufficiency of the means adopted with this object in view, the hesitating and weak support and sometimes the bad faith of the governors of the province,—all these circumstances have rendered the zeal of the sanitary officials useless. We believe that it is necessary that the Ottoman Administration should bring this department to perfection.

The portion assigned to the defence of the province against maritime arrivals from the Gulf is still more insufficient. A sanitary post established at Bassorah is the only one on this side to protect the Ottoman territory against choleraic importations; and this post again has such a reputation for unhealthiness that, for a long time past, it has not been found possible to get a Medical Officer to occupy it. Lately another post has been added to this, nearer the sea, at Faô, towards the mouth of the Shatt-el-Arab, but even if this latter post were occupied by a Medical Officer, as decided by the Council of Health, it would not suffice to guarantee the province against pilgrims arriving *viâ* Mohammera and avoiding Bassorah.

In the direction of the Persian Gulf then we find an insufficiency of means, and consequently a dangerous way opened for the importa-

tion of cholera. The Ottoman Administration ought to look to this matter seriously. As for ourselves, taking into account the difficulties of every kind presented by a complete organisation in this direction, it seems to us that it would, perhaps, be the wisest course to revert to an old plan of defence which protected Bagdad, towards the south, by sanitary posts supported by the barrier formed by the Tigris and Euphrates before their confluence at Korna. Without going into further detail, we invite the attention of the Ottoman Administration to this point.

We come now to the question of the measures to be adopted in the event of cholera breaking out in Persia.

With regard to the northern part of the line, the principal passage through which is at Kizzil-Diza, as the gathering on this side is never so great as to cause injurious crowding, and as only a small number of pilgrims bound to Mecca come here, we believe that the ordinary measures of quarantine would suffice, more particularly as cholera has never penetrated by this way. We admit, however, that extraordinary circumstances might arise requiring exceptional precautions, which might be carried as far as the temporary interruption of communication, such a circumstance, for instance, as the occurrence of a serious epidemic on the frontier simultaneously with an assemblage of troops in the vicinity.

The southern portion of the line, from Revendouz to the Persian Gulf, ought to be, we think, the object of greater precautions on account of the pilgrimage. Whatever may be the vigilance and the energy of the co-operation of the authorities on this frontier, we cannot admit that, if cholera were to prevail in Persia among the pilgrims on their way to the Ottoman frontier, it would be possible to impose an efficacious quarantine on such a large number of persons travelling together. Experience has shown that in such cases the quarantine has always been broken through or eluded, and that cholera has invaded the province of Bagdad.

With a view to avoid such a misfortune, we are of opinion that, on the receipt of news of the appearance of cholera in Persia—and such news ordinarily spreads with great rapidity—if the period of the ordinary gathering of the pilgrims is at hand, the governor of the province of Bagdad should come to an understanding with the Persian authorities either entirely to suspend the pilgrimage, or to allow only a limited number of pilgrims to proceed in small groups to the frontier, whence, after performing quarantine, they might be allowed to continue their journey to the holy places. It is unnecessary to say that such a measure presupposes a previous agreement upon the matter between the two Governments.

When cholera does not exist, communication between the two countries might be freely allowed without disadvantage, provided that sufficiently correct information exists of the sanitary state of Persia.

As for corpses, in consequence of what we have said before, they should not be admitted at any time into Ottoman territory, except when embalmed under the specified conditions.

Maritime arrivals from the Gulf ought constantly to be the object of attentive watch at Faô and Bassorah, in such a way as to subject all suspected arrivals to a suitable quarantine. For further security, it would be very desirable if all ships navigating in these waters should be made to provide themselves with bills of health. In order to attain this object, it would be necessary that the Porte should come to a friendly understanding with Persia and especially with the Imam of Muscat, whose flag waves over almost the entire navigation of the Gulf. As for ships coming from British possessions, there is no doubt that they will at once submit to this formality.

It will be seen that what we require for the security of the province of Bagdad requires abundant good-will on the part of the Persian Government, and energetic co-operation on the part of the Ottoman authorities.

XI.

Measures against the importation of cholera through Bukharia and the steppes of Tartary.

The Conference should, for a time, transport itself with the Committee to the banks of the Oxus and as far as the Jaxartes, in ancient Bactriana, in scarcely known countries, inhabited by a fierce people, hostile to foreigners, especially to Europeans, and in which a few intrepid travellers only have been able to set foot at the peril of their lives. We speak of all that country situated to the south-east of the Caspian Sea, and which, bounded to the south by Persia and Cabul, to the north by the Jaxartes, now the *Ser-Daria*, extends to the frontiers of the Chinese Empire. This vast region comprises, from the west to the east, the country of the Turcomans, Khiva, not far from the Oxus (the *Amou-Daria*), and the deserts surrounding it, then the country known under the name of Great Bukharia, comprising to the south the territories of Balkh and Koondooz, and to the north Khokhan, separated from Bukharia Proper by the Ser-Daria. Of all this immense extent of country,—which, if the hopes we cherish be realised, will soon be brought under the influence of European civilisation;—the latter portion, that is, Bukharia, is of particular interest to our subject. There we find fertile and populous districts, important towns, notably Bokhara, centres of considerable trade : there, in short, an Asiatic civilisation flourishes, barbarous no doubt, but very superior to that of the adjoining nomadic hordes.

Bukharia has often been visited by cholera. From data collected on this point by Dr. Polak, we find that most frequently the disease reaches the country from *Meshed* with the caravans which keep up important commercial relations between that town and Bokhara. This,

however, is not the only route; for it seems proved that in 1828 and in 1845 cholera was imported there from Affghanistan *vid* Cabul.

Be this as it may, we know—and this is what interests us here—that in 1829 cholera, leaving Bukharia, was able to make its way across the steppes of Tartary and reach Orenburg, at the doors of Europe, where, on that occasion, it died out.

How was this invasion effected? and why is it we can be almost certain that it will never recur? This is what the Committee proposes to explain by the aid of the valuable information furnished to it by one of its members, Dr. Bykow.

We have a word to say first, regarding the steppes traversed by the caravans in proceeding from Bukharia to Orenburg and other parts of the Russian territory. From the river Ural to the Sari-Sou and the Ser-Daria, they comprise a superficial extent of about seventeen thousand square leagues. They are almost desert plains, covered in spring with brushwood and immense grass, and cut up into arid, sandy expanses, impregnated with salt towards the borders of Lake Aral. The general absence of forests and trees, as well as the scarcity of running water, form the chief characteristics of these steppes. An insignificant space only is occupied by cultivated fields, and these are scarcely seen except on the banks of the Ser-Daria and its affluents. The most considerable sandy deserts to be found in the path of the caravans from Bokhara are the Kizzil-Kouhm, between that town and the Ser-Daria, then the Kara-Kouhm, which extends to the north of Lake Aral. The caravans journey a distance of 180 versts, 160 of which are entirely unprovided with water, through the Kizzil-Kouhm, and 400 versts through the Kara-Kouhm. Beyond this desert, between Lake Aral and the Caspian Sea, we find a chain of mountains, known under the name of Monkoh-Char, which, on their further slopes, lose themselves in the arid and sandy plateau of Oust-Ourt, which ends, to the west, in a steep incline.

The greater number of the Kirghiz tribes, those especially of the great Horde, are still migratory; but there are others, whose numbers have been increasing for some years past, who encamp in the same spot every winter.

The distance between Bokhara and Orenburg is about 2,000 kilometres, which are traversed by the caravans in two months or more, according to circumstances. The caravans from Bokhara proceed to Orenburg, Orsk, and Troïtzk; those from Tashkend, near Khokhan, on the further bank of the Ser-Daria, proceed to Troïtzk and Petropaulovsky, and those from Khiva go to Orenburg and Astrakhan, touching at Saraitchyk, near the mouth of the Ural.

The annual number of caravans from each of these towns varies from two to four. They reach their destination ordinarily during the months of April, June, and July.

The most difficult part of the journey for the caravans from Bokhara, on account of the extent of the desert spaces, is that before

reaching the Ser-Daria and the places where it can be passed. After the passage of the river, inhabited places are less rare on the right bank which is skirted by the caravans for some time, while approaching Lake Aral. Their route is always the same, because they meet with fewer natural obstacles there, and provisions and water are more easily procurable than anywhere else.

The immense extent of the steppes, where the only population met with is dispersed in small nomadic groups, the deserts to be got over, the length of the journey from Bukharia as far as Orenburg, added to the custom of the Tartars to abandon to the mercy of Providence in the steppes those of their sick whom they suppose to be suffering from contagious diseases, are incontestably serious obstacles to the propagation of cholera. Under such circumstances, it may easily be conceived that the disease has only once succeeded in forcing a passage.

There remains but to show that what occurred in 1829 will probably never again recur.

It has not yet been found possible to decide exactly whether cholera was imported into Orenburg by the caravans from Bokhara, or by the Kirghiz tribes in the vicinity of the town. When the disease suddenly made its appearance in the month of August, amongst the military of the garrison and afterwards amongst the inhabitants, a report had already been in existence for some time that cholera was present among the Bokhara Tartars who had come with the caravan, and amongst the nomadic Khirghiz of the adjacent steppes. Be this as it may, it is certain that the disease did not break out in the town until after the arrival of the caravan from Bokhara and after the sale of the goods it had brought.

Now, at that period, the boundaries of the Russian Empire, in this direction, were not nearly what they are now. The River Emba, which loses itself in the north-east of the Caspian Sea, and an almost straight line, traced from its source to the fort of Orenburg, then formed the frontier. No watch could be exercised over the Kirghiz hordes dispersed beyond this limit; and the river Ser-Daria offered an easy mode of free communication to the nomadic tribes encamped on both its banks. With the aid of boats and rafts, they took over the produce of Khiva and Bokhara, which the Khirghiz of the right bank afterwards came to exchange for Russian goods. Though this intercourse, indeed, was not very great, it constituted a danger by reason of the absence of all sanitary supervision, and it can easily be understood that, proceeding from place to place, cholera may have thus been able to reach Orenburg unexpectedly.

At present the situation is altogether different. The river Ser-Daria has become the frontier of the Russian Empire; military posts have been established there to guard the principal passages. It is the duty of the medical officers stationed in the forts built on the banks of the river to inspect the sanitary condition of the Kirghiz

hordes, and the passing caravans. At present, therefore, an important barrier has been erected under the best circumstances, in addition to the natural obstacles afforded by the country ; and this is what makes us say that, when the Russian Government, resting upon this already well organised base, shall have decided on putting measures against cholera into force, there will be but little probability of cholera reaching us from this side.

As for an importation of the disease across the steppes extending between Lake Aral and the Caspian Sea, the thing seems impossible, considering that these steppes are almost desert.

Thus, thanks to the measures already adopted by the Russian Government in the direction of Bukharia, and to the complement which no doubt, it will deem proper to add to them, it seems to us that Europe need not henceforth apprehend an invasion of cholera across the steppes of Tartary.

XII.

Measures to be adopted on the Russo-Persian Frontier.

The question which now remains to be treated of here is, without a doubt, one of the most important to the object to be attained, since it consists of nothing less than opposing an obstacle to the march of cholera by the land route it has generally followed in penetrating into Europe. You will permit us then to enter into certain details on this subject, by which we shall be enabled to show, with some precision, where the danger exists on this side, and where, consequently, preventive measures are especially necessary. We must say, in the first place, that all the details into which we have to enter have been communicated to us by our colleague, Dr. Bykow.

Cholera has thrice been imported with certainty from Persia into Russia, *viz.*, in 1823, in 1830, and in 1847. We leave aside the importation of 1829 into Orenburg, which came from Bukharia, and which, as is known, died out without effect.

The importation of 1823 also resulted in nothing disastrous to Europe; the disease died out in Astrakhan. But its march is curious to follow. In 1822, cholera, which prevailed in Persia, invaded the provinces of Mazanderan and Ghilan, situated on the southern and south-western shores of the Caspian Sea. After having languished there during the winter months, the epidemic reappeared in April 1823 at Rekht, and, skirting the coast, it passed the Russian frontier at Astara in June, showing itself in the Khanat of Talych, now the district of Lenkoran. This town was attacked on the 29th June, but its appearance was short. On the 13th July, it declared itself at Kourgalak, a village five kilomètres distant from Lenkoran. On the 16th it appeared in the islands of Salian or Sari, near the mouth of the Kour, and soon spread to the town of Salian, situated on the river. From Salian, the disease, proceeding up the river, spread in various directions; it attacked several villages in the lower valley of the

Shirvan; then, through the defiles and low lands, it proceeded towards the Kouba, appearing there on the 25th August. Not till the 11th September did cholera make its appearance at Baku on the Caspian Sea to the south-east of Kouba. Finally, on the 22nd September, the disease broke out suddenly at Astrakhan, where the first cases recorded in the marine hospital, were those of two sailors belonging to the same crew. This was the first appearance of cholera in Europe.

The importation of 1830 followed precisely the same route, with this difference that, on this occasion, the disease did not die out on the road, but took the invading march we are acquainted with. Thus, during the autumn of 1829, cholera raged in the northern provinces of Persia; it seemed to die out in the winter; but, in the spring of 1830, it reappeared in the province of Ghilan, at Recht, and at Enselli on the Caspian Sea. Towards the middle of June the disease declared itself in the province of Shirvan and at Salian, whence it spread in the districts of Baku, Kouba, and Derbend, in the Khanat of Talych, the province of Sherka, and the district of Elisabethpol. From this latter town, the disease, proceeding up the Kour, attacked Tiflis at the end of July.

At the same time the disease proceeded up to the west of the valley of the Kour, and, on the 4th July, manifested itself at Sedlistow, a quarantine station at the mouth of the Volga, on a brig of war, named the *Bakou*, which had arrived from the island of Sari. On the 20th July, the disease broke out at Astrakhan, without its being found possible to decide exactly how it had come from Sedlistow, which was 90 versts away. On the 4th August, proceeding up the Volga, the disease reached Saratow.

The third importation from Persia into Russia—that of 1846-47—reproduced almost the same circumstances as the former. It was again from the province of Ghilan that cholera spread, in October 1846, to the districts of Lenkoran and Salian, soon reaching Shemakha (8th November,) Baku (14th November), and Derbend in December. After an apparent extinction in the winter months, the disease reappeared in April 1847, in the districts of Samour, Kouba, and Derbend, and then spread to Temir-Khan-Showry. From this latter town it was transmitted to Kisliar in June by a detachment of invalid soldiers sent to the mineral waters. From Kisliar the disease spread among the Kalmucks scattered about the steppes as far as the Volga. The epidemic broke out at Astrakhan on the 16th July, and again it was not found possible to determine exactly how it was imported. Some maintained that the Kalmucks had brought it in, others put the blame on the arrivals by sea. The fact is that the first cases were observed on the 15th July in a quarantine establishment in an islet named Birutchaja-Kossa, whence the disease appeared to spread to the town.

In the same way as in the preceding epidemic, while the disease was skirting the shores of the Caspian, starting from Salian it pro-

ceeded up the valley of the Kour, and, while radiating in various directions, it reached the town of Tiflis on the 29th May. It is to be noted that, before reaching Tiflis, the great road to that town from Baku diverges into two great branches, one to the south, passing by Erivan, Nakhtshivan, Joulfa, Ordoubaz, and going on towards Tauris. It is the great way of communication with this part of Persia. The other branch leads to Alexandropol to the west, and joins the road to Kars. Now, the cholera, at the same time that it advanced upon Tiflis, entered both these branches, by one of which it re-entered Persia, while by the other it reached Kars and invaded Turkish Armenia.

From Tiflis, following the road leading to the coast, the disease spread in the districts of Gori and Koutais, and reached Redout-Kaleh on the Black Sea, whence it was imported into Trebizond.

To the north of Tiflis the epidemic followed the great military road traversing the Caucasian chain at a height of 7,000 feet, and made its appearance at the end of July at Stavropol on the further slopes.

As for the epidemic which prevailed in 1852 in the district of Erivan, and which must have been the remains of a fourth importation from Persia, we have no details of it. It appears only from official documents that the disease crossed the frontier (at what point?) towards the end of August, and that, in the district of Erivan, there were, down to the 8th January 1853, sixty-four deaths among the military.

From this rapid but very interesting review, it appears most clearly evident, that, in the three first invasions of Russia by cholera from Persia, the disease always came from the Persian provinces bordering on the southern and south-eastern coasts of the Caspian Sea (Mazanderan and Ghilan), and that it always followed the same route in its march, except, perhaps, in the epidemic of 1852, spreading from Recht to Lenkoran and Salian, probably by sea; that, once arrived at Salian, *i. e.*, in the marshy delta of the river Kour, the disease marched in two different directions. On the one hand, spreading in the lower valley of the Shirvan, it took a northerly direction, skirting the coast, and attacked in turn the towns of Baku, Kouba, Derbend, Temir-Khan-Showry, &c., then it showed itself at Astrakhan, making use in all probability of means of maritime transport in order to arrive at that town. On the other hand, we see it proceed up the valley of the Kour, reach Tiflis, and, by the roads of communication, spread in the trans-Caucasian provinces, return to Persia by the south, reach the coast of the Black Sea and the Ottoman territory by the west, and even pass over the Caucasus to the north by the military road traversing the chain.

On this side then we see a road for which cholera has a predilection, the stages of which are so to say, marked from Recht; and it is clearly evident that, on these marshy and unhealthy coasts, the con-

ditions favorable to the development and propagation of the disease exist in the highest degree.

But if we consider these things closely, it is easy to see that this very dangerous route is rather narrow at its point of departure, and that the great probability of propagation does not commence till after the invasion of the delta of the Kour by the disease, because then only does it commence to radiate in every direction, to the north along the coast, as well as to the west by the valley of the Kour and the roads traversing it. When cholera prevails at Recht or at any point on the coast, in proximity to the Russian frontier, no doubt the danger is menacing; but defence is not altogether impossible, since the chief thing to be done is to be on guard against maritime arrivals, as the land route on this side is little frequented, and is confined somewhat close to the mountains, which are easy of defence. But after the arrival of the disease at Lenkoran and especially at Salian the question changes, and it may already be predicted that, unless very energetic efforts are made, perhaps in spite of everything, cholera will spread and threaten Europe in two directions by Russia Proper and the Black Sea.

The experience of the past, in harmony with good sense, shows us, therefore, that the most important position to be defended against the invasion of cholera is the delta of the Kour. Is this defence practicable? Can this entrance for cholera be closed, either on the land side at Astara on the frontier, or in the direction of the sea at Lenkoran and Salian, or rather at the islands of Sari, which are close to it? We cannot say; but we are firmly convinced that the Russian Government, which is so interested in the question, will not neglect the necessary means to effect the object. This, of course, of itself assumes an effective supervision on the whole Russian coast of the Caspian, and means of quarantine organised on new bases in the principal ports having relations with Persia, notably at Baku and Astrakhan, where, moreover, lazarettos already exist.

In regard to the line of defence on the land side, it already comprises a certain number of sanitary posts, the principal of which are at Astara, Belasouwar, Jebraeel, Sharowrah, and *Joolfa*, on the road leading from Tauris to Nakhtshivan, and where a quarantine station exists.

We do not the least pretend to give advice in regard to what is to be done to perfect the organisation of this line, or with respect to the question of quarantines in the Caspian Sea. In this matter the Russian Government is a much better judge than we can be; and as there is no want of competent men or means of action, it is certain that every thing that can possibly be done will be done. Our only wish has been to point out distinctly the extreme importance attaching to the organisation of the defence of this coast, in the point of view of renewed invasions of Europe by cholera.

Recapitulation.

The Committee having arrived at the conclusion of its task and of its travels in various parts of the world, thinks it would not be

useless to recapitulate in a few words the principal results of its labors.

After having established that measures of quarantine, suitably applied, are definitively less onerous to commerce than the injuries caused by cholera itself, it endeavored to demonstrate by a rough sketch the routes followed by the disease in coming to Europe, and, considering the natural obstacles to its passage that it meets with, that the closer to the original source of the disease we work, the greater are the chances of arresting it in its invading march, at the same time that the obstruction and damage caused by preventive measures are lessened.

Taking these preliminary considerations for the base and plan of its labors, the Committee occupied itself in the first place with everything concerning India, the original source of the disease, in the threefold point of view of the endemicity, the epidemic development, and the propagation of cholera.

To combat its endemic nature, the extinction of which does not seem impossible, the Committee depends greatly upon the hygienic measures already in force, and the works of sanitation in course of execution, but it also attaches great importance to the commencement of continued researches, their object being the discovery of the special conditions which maintain endemic cholera.

To restrict its epidemic development—in proportion to the great part taken in it by Hindoo pilgrimages—the Committee has approved of the wise precautions already taken, and it has submitted to the judgment of the competent English authorities a sketch of certain complementary measures the advantage of which cannot be denied, supposing them to be practicable.

Lastly, with a view to prevent, as far as possible, the maritime exportation of cholera, the Committee has proposed a series of precautions, the principal being the *generalised* application of the Act passed by the Government of India, intituled *the Native Passengers' Act*, a regulation which may advantageously be modified in the point of view of certain sanitary precautions.

Passing on to the important question of the measures to be adopted in the intermediate countries between India and Europe, the Committee occupied itself in the first place with the means to prevent the importation of cholera by sea. With this object it considered in the first place the convenience of a sanitary establishment at the entrance of the Red Sea, and it gave its opinion very clearly on the utility of such an institution and the conditions indispensable to its proper working, without misconceiving the difficulties which might prove an obstacle to its realisation.

The Committee next considered the question of the pilgrimage to Mecca in connexion with all the sanitary peculiarities attaching to it, *viz.*, the organisation of a sanitary service on the coast of the Red Sea; precautions relating to the departure and embarkation of

the pilgrims ; hygienic measures at the places of pilgrimage ; measures against the importation of cholera into the Hedjaz ; and lastly, measures to be taken against arrivals from the Hedjaz, in the event of the occurrence of cholera during the pilgrimage.

After deep study, the Committee framed conclusions on all these points, which conclusions, it thinks, solve satisfactorily and conformably to all interests, the difficult problem of preserving Egypt and Europe from the importation of cholera by the pilgrims.

This done, and foreseeing that cholera might well again penetrate into Egypt, the Committee framed the question whether, considering the extreme peril with which Europe might be threatened, it would not be wise and conformable to all European interests to apply exceptional measures temporarily to Egypt. But, at the same time that it made its opinion known, it refrained from replying.

Having come to the consideration of the means adapted to prevent a fresh invasion of cholera by land, the Committee found itself in presence of a much more complex problem, and one much more difficult of solution, than the former. However, it did not recede before the difficulties of its task, and if it has not been able to afford satisfactory solutions on all points, it thinks it has thrown some light upon the subject, and afforded useful indications.

With regard to Persia, while we understand how extravagant the pretension to prevent the introduction of cholera into this country is, we have nevertheless indicated what is to be done with this object, and shown the points of territory to be secured ; but we have specially insisted upon the precautions to be taken in the interior of the country to restrict the development of epidemics of cholera ; and, taking into consideration the part performed by the pilgrimages, we have indicated the means of diminishing the unhappy results of the transport of corpses. This is the limit of our advice to Persia.

Then we occupied ourselves with the means of preserving Turkey against the importation of cholera from Persia by land or by the Persian Gulf. We have not deceived ourselves as to the difficulty of obtaining success, nor the number of weak points in the line of defence, especially its southern section. Nevertheless we have not despaired of diminishing the causes of importation and of epidemics on this side ; and we have enumerated the means of doing so. Definitively, we have pointed out that if the importation of cholera into Mesopotamia is of frequent occurrence, it is reassuring to know that as yet no invasion of Europe has occurred by means of these repeated importations.

Regarding the importation into Russia, we have had the pleasure of pointing out that, thanks to the extension of the frontiers of that great empire and the sanitary precautions already taken on the boundaries of Bukharia, there is but little probability henceforth of an invasion of Europe by cholera across the steppes of the Kirghiz, as in 1829.

On the other hand, we have shown that the most dangerous way, that by which the two great invasions of Europe were effected, is in a very circumscribed Zone on the south-west coast of the Caspian Sea; and that the disease, after reaching the delta of the Kour, has a tendency—a regular tendency it may be said—to extend itself to the north and the west, reaching Europe simultaneously by the mouths of the Volga and the Black Sea. We are obliged to call attention to this hitherto almost unnoticed fact, insisting at the same time upon the importance of concentrating on this side means of action capable of preventing the importation of the disease into Russian territory.

The Committee, as may be seen, does not pretend to have furnished the complete solution of the grave problem submitted to its consideration; but if it has only succeeded in specifying its elements with greater distinctness, if it has only been able to show the possibility of closing henceforth, if not the two doors for the entrance of cholera into Europe, at least the entrance by sea across the Black Sea, it thinks it has not achieved a useless task. It will especially entertain this conviction, if the Conference, sharing its views, will, by its approbation, cause our respective Governments to come to a mutual understanding and combine their efforts to attain this humane object.

Members of the Committee.

COUNT DE LALLEMAND, *President.*	SALEM BEY.
F. BOSI.	A. SOTTO.
A. BYKOW.	VERNONI.
KALERGI, *Secretary.*	A. FAUVEL, *Reporter.*

CONSTANTINOPLE:
The 29th August 1866.

APPENDICES.

APPENDIX A.

NOTE ON THE WORKS OF SANITATION UNDERTAKEN IN THE GREAT CITIES OF INDIA, THE MEASURES OF HYGIENE PUT IN FORCE IN CALCUTTA, AND THE FUNCTIONS OF THE THREE PERMANENT SANITARY COMMISSIONS.

(*Extracted from a communication made by Dr. Goodeve*).

The sanitation of the cities of Calcutta and Bombay has been undertaken on a large scale.

At Calcutta for some years past a vast system of drainage has been in progress, which runs through the whole city, and does not allow of any infiltration from the river. Moreover, the Government of Bengal has sanctioned the construction of an aqueduct and pipes for the

supply of water to the city, the water being brought from a distance of 25 kilomètres. Corpses in Calcutta are no longer thrown into the Hooghly, this custom having been altogether prohibited in the city. The corpses of the Hindoos are burnt, the wood for the cremation of paupers being furnished at the cost of the municipality. The old sewers of the city, which were choked up with filth, have been cleaned out. The public latrines have been greatly improved by being placed under proper regulations. The excrementitious matter is removed from them every day, and carried to the distance of a league from the city, where it is buried in a piece of waste land. It was hoped last year that in a short time no more of this ordure would be thrown into the river, considering that a railroad was in construction for the purpose of carrying it, as well as all filth, in well-closed vessels, to a distance from the city. The municipality has undertaken the construction of a great public slaughter-house in the environs of Calcutta on the best models of Europe. When it is completed, all slaughter-houses within the town will be suppressed. All organic detritus, all dead animals, are carried away out of town every day, and burnt in a furnace specially constructed for the purpose so as to give out no bad odour. All occupations or trades prejudicial to health have been prohibited within the city. Other important reforms have also been commenced; but we have said enough to show that real sanitation is in progress in Calcutta.

For some years past the city of Bombay has been improving, but more progress has been made recently. The municipality has just been reorganised. A more complete system of cleanliness is in course of execution; the streets have been widened and freer ventilation obtained, as well as an improvement in appearance, by the levelling of the walls of the old fort and the construction of new quarters. A system of drainage is in course of construction. Recently the Government drew up an Act to regulate the width of the streets and the height of the houses, the minimum of openings for the ventilations of rooms, and the diminution of crowding in the dwellings of the poorer classes.

Less has been done in the way of new buildings in the city of Madras; but plans have been prepared of aqueducts to bring water to the city from a considerable distance, and for a system of drainage.

In addition to the Presidency towns, the sanitation of many other towns and villages has been commenced, especially of towns having military cantonments attached to them. As for the military stations themselves, the greatest changes have been effected or are in progress. The barracks have been enlarged, and, in many instances, altogether rebuilt, on a model plan providing for space, ventilation, means of ablution, latrines, water-supply, &c., in accordance with the most advanced system of hygiene. The latrines are cleaned out daily, and the greatest care is taken to keep the whole of every station clean.

In the commencement of the year 1864, the Government made a great step towards the sanitary improvement of India by the nomination

of *three boards of health, or permanent sanitary commissions*, one for each Presidency, having their offices respectively at Calcutta, Madras, and Bombay. These Commissions are composed of civilians and military officers, engineers, and medical men. The rules constituting them instruct them that their duty "is to give advice and assistance in everything concerning the public health." Thus the selection of new stations, the improvement of the already existing stations and bazars, the improvement of the native towns, the means of preventing or lessening epidemic diseases, and, generally, the constant supervision of the sanitary condition of the European and native population, as well as the indication of the causes and means of preventing diseases, are within the scope of the duties of these three Commissions.

The Commissions also received orders to organize general sanitary systems for each Presidency and local boards of health to carry on the duties of the service in the towns, the appointment of health officers, the registration of deaths, &c.

The plans of organisation have been submitted to the various Governments, and have been taken into consideration. They contain very useful provisions, among others that of local executive sanitary Commissions which cannot fail to exercise great influence upon the public health, and notably so with regard to the development and propagation of cholera.

APPENDIX B.

ACT No. XXI. OF 1858.

PASSED BY THE LEGISLATIVE COUNCIL OF INDIA.

(Received the assent of the Governor-General on the 25th May 1858.)

AN ACT *for the Regulation of Native Passenger Ships, and of Steam Vessels intended to convey Passengers on coasting voyages.*

Preamble.

WHEREAS abuses have occurred in the over-crowding of ships conveying Native Passengers between ports and places within the territories in the possession and under the Government of the East India Company, and ports and places in the Red Sea or Persian Gulf; and whereas it is expedient to prevent such abuses, and to provide for the regulation of all ships carrying Native Passengers as aforesaid which shall depart from or arrive at any of the ports or places within the said territories, and also for the regulation of steam vessels intended to carry passengers on coasting voyages; It is enacted as follows:—

What shall be deemed a "Native Passenger Ship" within the meaning of this Act.

I. Every vessel carrying more than thirty passengers being natives of Asia or Africa, which may depart or proceed on any voyage from a port or place within the said territories to any port or place in the Red Sea or Persian Gulf, or which may arrive at any port or place within the said territories from

any port or place in the Red Sea or Persian Gulf, having on board more than thirty such passengers, shall be deemed a Native Passenger Ship within the meaning of this Act.

Native Passenger Ship to sail only from ports appointed by Government.

II. No Native Passenger Ship shall depart or proceed upon any voyage to which this Act extends from any port or place within the said territories other than such ports and places as the Local Government may from time to time appoint;* and after any Native Passenger Ship has departed or proceeded upon any such voyage from a Port or place so to be appointed, no person whatsoever shall be received on board as a passenger, except at some other duly appointed port or place.

Not to sail without obtaining a certificate.

III. No Native Passenger Ship shall depart or proceed upon any such voyage from any Port or place appointed under this Act, until the Master shall have obtained a certificate from an Officer authorized to grant the same.

Penalty.

IV. If any Native Passenger Ship departs or proceeds upon a voyage from any port or place within the said territories, or if any person is received as a passenger on board a Native Passenger Ship in contravention of the provisions of the last two preceding Sections, the Owner or Master shall be liable to a penalty not exceeding one hundred Rupees for every passenger conveyed on a ship unlawfully departing or proceeding on such voyage, or for every passenger unlawfully received on board; and the ship, if found within two years in any place within the said territories, may be seized and detained by any Chief Officer of Customs until the penalties incurred under this Act have been adjudicated, and the payment thereof, with all costs, have been enforced under the provisions of Section 29.

Appointment of Officers.

V. The Local Government shall appoint such persons as it may deem proper to exercise or perform the powers and duties conferred or imposed by this Act.

Master to give notice of day of sailing, &c.

VI. The Master of any Native Passenger Ship sailing from any port or place appointed under this Act, shall give notice to the proper Officer that the ship is to carry Native Passengers, and of her destination, and of the proposed day of sailing; such notice shall be given not less than three days before the proposed day of sailing.

Power to enter and inspect Ship.

VII. After receiving such notice, the Officer aforesaid, or any person authorized by him, shall be at liberty at all times to enter and inspect the ship and the fittings, provisions, and stores therein; and any person impeding or refusing to allow such inspection, shall be

* NOTE.—The ports appointed for the Bombay Presidency by Notification, dated 15th April 1859, are Bombay, Surat, Kurrachee and Aden.

liable, on conviction, to a penalty not exceeding five hundred Rupees for each offence.

Ship may be surveyed.

VIII. The Officer aforesaid may, if he think fit, cause the ship to be surveyed at the expense of the Master by a competent Surveyor, who shall report whether the ship is, in his opinion, sea-worthy and fit for her intended voyage.

Officer to be satisfied before giving Certificate.

IX. The Officer aforesaid shall not give his certificate, unless he shall be satisfied—

That the ship is sea-worthy.

1. That the Ship is sea-worthy and properly manned, equipped, fitted, and ventilated; and has not on board any cargo likely, from its quality, quantity, or mode of stowage, to prejudice the health or safety of the passengers.

That the space between-decks for passengers is sufficient.

2. That the space appropriated to the passengers in the between-decks contains at the least nine superficial and fifty-four cubical feet of space for every adult passenger on board, that is to say, for every passenger above twelve years of age, and for every two passengers between the ages of one year and twelve years.

That the space on the upper deck is sufficient.

3. That a space of four superfical feet per adult is left clear on the upper deck for the use of the passengers.

That there is a due supply of provisions.

4. That provisions, fuel, and water have been placed on board, of good quality, properly packed, and sufficient to supply the passengers on board during the declared duration of the intended voyage, according to the scale hereinafter contained.

Number of passengers.

X. No such ship shall carry any greater number of passengers than, together with the Master and crew, shall amount to the proportion of two persons for every three tons of the registered or estimated tonnage of the ship.

List of passengers.

XI. The Master of any such ship, before departing or proceeding on any such voyage from any port or place within the said territories, shall sign two lists, specifying (as accurately as may be) the names of all the passengers, and stating the number of the crew, and shall deliver them to the Officer aforesaid, who shall thereupon (after having first mustered the passengers and compared the number and names of such passengers with the lists) countersign and return to the Master one of such lists. The Master shall note in writing on such last mentioned list, and on any additional list to be made under this Act, the date and supposed cause of death of any passenger who may die on the voyage, and shall forthwith, on the arrival of the ship at her destination or at any port in the said territories at which it may be proposed to land passengers

and before any passengers are landed, produce the list, with any additions thereto made, to any person lawfully exercising Consular authority on behalf of Her Majesty at the port of arrival if it be a foreign port, or to the Chief Officer of Customs, or the Officer (if any) appointed under this Act, at any port or place within the said territories at which it shall be intended to land the passengers or any of them. In case of non-compliance with any of the requirements of this Section on the part of the Master, or if any false entry be wilfully made in any such list, the Master shall be liable to a penalty not exceeding five hundred Rupees for each offence.

Ship taking additional passengers and touching at intermediate port.

XII. If, after the ship shall have departed or proceeded on any such voyage, any additional passengers are taken on board at a port or place, within the said territories appointed under this Act for the embarkation of passengers, or if such ship shall, upon her voyage, touch or arrive at any such port having previously received on board additional passengers, at any place out of the said territories, the Master shall obtain a fresh certificate from the Officer at such port, and lists of all such additional passengers shall be made; and all the provisions hereinbefore contained in that behalf shall be applicable to any certificate to be granted or any list to be made under this Section.

Penalty for fraudulent alteration in Ship after Certificate is obtained.

XIII. If any Master of a ship, after having obtained a certificate under Section 3 or Section 12 of this Act, shall fraudulently do or suffer to be done any act or thing whereby such certificate shall become inapplicable to the altered state of the ship, its passengers, or other matters to which such certificate relates, he shall be liable to a penalty not exceeding two thousand Rupees.

Information to be transmitted to Ports of embarkation.

XIV. The Chief Officer of Customs, or the Officer (if any) appointed under this Act, at any port or place within the said territories at which the ship shall touch or arrive, shall, with advertence to the requirements of this Act, transmit any particulars which he may deem important respecting the ship and the passengers conveyed therein, to the Officer at the port from which the ship commenced her voyage, and also to the Officer at any other port within the said territories where the passengers or any of them embarked.

Report of Consul, &c., to be admissible in evidence.

XV. In any proceeding for the adjudication of any penalty incurred under this Act, any document purporting to be a report of such particulars as are referred to in the last preceding Section, or a copy of the proceedings of any Court of Justice duly authenticated, and also any like document purporting to be made and signed by any person lawfully exercising Consular authority on behalf of Her Majesty in any foreign port, shall be received in evidence, if the same appears to have been officially transmitted to any Officer at or near the place where the proceeding under this Act is had.

Length of voyage to be fixed by proclamation.

XVI. It shall be lawful for the Local Government, by any proclamation to be from time to time issued for that purpose and published in the *Government Gazette* (if any), or in one of the public newspapers, to declare what shall be deemed, for the purposes of this Act, the duration of the voyage of any Native Passenger Ship from any port or place to any other port or place.

Quantity of provisions and water to be shipped.

XVII. Every Native Passenger Ship, at the time of departure from the port or place at which passengers shall be embarked under this Act, shall have on board good and wholesome provisions for the use and consumption of the passengers, over and above the victualling of the crew, to the amount or in the proportion following, that is to say, a supply of water to the amount of five gallons to every week of the computed voyage for every passenger on board, such water being carried in tanks or sweet casks, and a supply of rice, flour, oatmeal, or bread stuffs to the amount of seven pounds weight to every week of the computed voyage for every such passenger; provided always that, when any such ship shall be destined to call at a port or place in the course of her voyage for the purpose of filling up her water-casks, a supply of water at the rate before mentioned for every week of an average voyage to such port or place of calling, shall be deemed to be a compliance with this Act. The provision of this Section regarding food shall be deemed to have been complied with in any case where it shall appear that, by the special authority of the Local Government, any other articles of food were substituted for the articles above enumerated as being equivalent thereto.

Contract by passengers for supply of their own provisions.

XVIII. The requirements of this Act respecting the supply of provisions for passengers shall not, except as to the supply of water, be applicable to any passenger who may have contracted to furnish his own provisions.

Penalty on Ships bringing excessive number of passengers from certain foreign ports to Indian ports.

XIX. If any ship, bringing passengers from any port or place in the Red Sea or Persian Gulf to any port or place within the said territories, shall have on board a greater number of passengers or persons than in the proportion prescribed by this Act, the Master of such ship shall, in addition to any other penalty which he may have incurred under the provisions of this Act, be liable, on conviction, to a penalty not exceeding Rupees 50 for each person in excess of such proportion.

Act not to apply to Ships-of-War, &c.

XX. Nothing in the foregoing provisions of this Act contained shall apply to any Ship-of-War or Transport belonging to or in the service of Her Majesty or of the East India Company, or to any Ship-of-War belonging to the foreign Prince or State, or to any ship under contract with the Government of any European State, or to any sea-going steam vessel regularly employed in the conveyance of the public Mails under a contract.

Or to sea-going Steam Ve-sels conveying public Mails.

Certificates to be furnished to Coasting Steam Vessels intended to carry passengers.

XXI. Steam vessels which may be intended to carry passengers on coasting voyages from or to any port or place whatsoever within the said territories, shall, before proceeding on such voyages, be furnished with certificates to be granted in the manner hereinafter provided.

Certificates to Coasting Steam Vessels how to be granted, &c.

XXII. Every such certificate shall be granted at the discretion of an Officer authorized to grant the same by the Local Government, and shall remain in force for the period therein specified, unless sooner revoked. The Officer so authorized shall not grant such certificate, or suffer the same to remain in force, unless he is satisfied, by inspection or survey (to be made at least twice in each year at the expense of the Master or Owner, and upon payment of a fee not exceeding twenty Rupees), that such steam vessel is sea-worthy and properly equipped with boats and otherwise, and that the engines and machinery are in a fit state to enable her to proceed on her voyage. The certificate shall state the limits (if any) within which the vessel is to ply, and the number of Native Passengers which the vessel is permitted to carry: such number to be subject to such conditions and variations according to the time of year, the nature of the voyage, and the cargo carried, as the case requires.

Copy of Certificate to be placed in conspicuous part of ship.

XXIII. The Owner or Master of any such steam vessel shall put up in a conspicuous part of the ship, so as to be visible to persons on board the same a copy of the said certificate, and shall cause it to be continued in such position so long as the certificate remains in force; and in default, such Owner or Master shall for each offence be liable to a fine not exceeding two hundred Rupees.

Penalty for excess of number specified in certificate.

XXIV. If such Steam Vessel has on board thereof any number of passengers which, having regard to the time of the year and other circumstances, is greater than the number allowed by the certificate, the Owner or Master shall be liable to a fine not exceeding twenty Rupees for every passenger over and above the number allowed by the certificate.

Penalty for proceeding without Certificate.

XXV. If any such steam vessel shall proceed on any such voyage without such certificate as aforesaid, the Owner or Master shall be liable to a fine not exceeding five hundred Rupees.

Grant of Certificate to be subject to control of Government.

XXVI. In the grant or revocation of any certificate whatsoever under this Act, the Officer granting the same shall be subject to the control of the Local Government or of any intermediate authority which that Government may appoint.

Penalty on landing passenger at a place other than that at which he has contracted to land.

XXVII. If any Native Passenger in any ship shall be landed at any port or palce other than the port or place at which he may have contracted to land, unless with his previous consent, or unless such landing is made necessary by perils of the sea or other

unavoidable accident, the Master shall for each offence be liable to a penalty not exceeding two hundred Rupees.

Passenger's right of action preserved.

XXVIII. Nothing in this Act contained shall take away or abridge any right of action which may accrue to any Native Passenger, or to any other person, in respect of the breach or non-performance of any contract made with the Master or Owner of the ship or his Agent.

Adjudication of offences and recovery of penalties.

XXIX. All offences against this Act shall be punishable in a summary manner by a Magistrate. If the person directed to pay any penalty is the Master or Owner of a ship, and the same is not paid at the time and in the manner prescribed by the order of payment, the Magistrate may, in addition to the means prescribed by law for enforcing payment, direct by warrant the amount remaining unpaid to be levied by distress and sale of the said ship, her tackle, furniture, and apparel.

Sum ordered to be paid leviable by distress on Ship.

Jurisdiction.

XXX. For the purpose of the adjudication of penalties under this Act, any offence shall be deemed to have been committed within the limits of the jurisdiction of the Magistrate of the place where the offender is found.

By whom proceedings for penalties to be instituted.

XXXI. The penalties to which Masters and Owners of ships are liable by this Act, shall be enforced only by information laid at the instance of the Officers appointed to grant certificates under this Act; or at any port or place where there is no such Officer, by the Chief Officer of Customs.

Application of penalties.

XXXII. Any Magistrate imposing any penalties under this Act may, if he thanks fit, direct the whole or any part thereof to be applied in compensating any person for any wrong or damage which he may have sustained by the act or default in respect of which such penalty is imposed, or in or towards payment of the expenses of the proceedings.

Interpretation.

"Magistrate."

XXXIII. The word "Magistrate" in this Act shall include a Magistrate of Police appointed under Act XIII of 1856, a Joint Magistrate, and any person lawfully exercising the powers of a Magistrate, and at the port of Aden the Political Resident and his Assistant.

"Local Government."

The words "Local Government" shall mean the person or persons for the time being immediately administering the Executive Government of that portion of the said territories where the port or place in question is situate.

"Master."

The word "Master" shall include every person having command or charge of a ship or steam vessel.

Commencement of Act.

XXXIV. This Act shall commence and take effect from and after the 1st day of August 1858.

APPENDIX C.

REGULATION APPLICABLE TO PILGRIMS IN THE DUTCH POSSESSIONS.

The Governor-General of Netherlands India has subjected the pilgrims, by Ordonnance dated the 6th July 1859, to the following prescriptions :—

1*st.*—Every man or woman of the native population under the authority of Government, who proposes to perform the pilgrimage to Mecca, shall be obliged to obtain a passport from the administration of his or her district.

2*nd.*—This passport can be obtained only from the chief executive authority of the district, who, before delivering it, shall satisfy himself that the applicants have the necessary means to defray the expenses of the journey to and fro, and that they have adopted proper measures for the maintenance of their families during their absence.

3*rd.*—A holder of a passport must show himself and have his passport *visé* on arrival in a locality where there is a Dutch consul or consular agent.

4*th.*—On his return the pilgrim is obliged to apply to the Governor of that place in Netherlands India which he reaches first, who shall affix his *visa* to the passport, so that the pilgrim may continue his journey to his home: After his arrival at which, he is bound to present himself before the local authorities, who shall note on his passport the date of his return home.

5*th.*—Any person proceeding to Mecca, and being unfurnished with a passport, or who shall have infringed the provisions of Sections 3 and 5, shall be fined in a sum not less than 25 and not more than 100 florins.

6*th.*—Passports of pilgrims to Mecca shall be registered in special registers, arranged according to the model indicated in the Ordonnance.

No. 336, dated 12th September, 1866.

From—LORD LYONS,

To—LORD STANLEY, M. P.

The report of the British Delegates to the Cholera Conference, No. 32 of the 10th instant, which is enclosed in my immediately preceding Despatch, will show your Lordship that resolutions on matters of very serious importance to Great Britian have been passed by the Conference. On some of these matters it is beyond my province to give an opinion. On being applied to by Dr. Goodeve and Dr. Dickson for advice, I recommended them to oppose temperately but decidedly all those measures which I conceived to be dangerous to our interests or to the welfare of our Indian subjects, and to be careful to give no

sanction to measures of which the tendency in these respects appeared to be doubtful. I thought that the consent of our Delegates to any such measures might in future discussion with us be used as an embarrassing argument by those who desired to carry them into effect, while the opposition made by our Delegates in the Conference need be no obstacle to the adoption by Her Majesty's Government hereafter of any measures which might on further consideration appear to be unobjectionable.

There is one point, however, connected with several of the measures recommended by the Conference on which my local experience here may justify my making some remarks.

It is recommended by the Conference that the control of sanitary matters in the Red Sea shall be given to an *international* commission. Now judging from the proceedings of the board of health here, and indeed from those of the Cholera Conference itself, there is reason to apprehend that an international commission would virtually be neither more nor less than a French Commission. We have a board of health at Constantinople, in which most nations having any pretension to maritime interests in Turkey, are represented. The French Government maintain as their Delegate to it a man of very great ability, Dr. Fauvel, sent expressly from France for the purpose, and receiving, I believe, a large salary. On almost all questions he commands a majority of the votes. The Ottoman members vote with him for fear of offending France, and appear to be easily intimidated whenever the manifest interests of Turkish shipping induce them to attempt any opposition to him. Many of the European nations have very small commercial interests in Turkey, while they have an overwhelming dread of cholera, and a great desire to please France. With others, as for instance, Italy and Greece, which have a considerable amount of shipping in Turkish waters, the fear of France and of cholera appears nevertheless to outweigh all other considerations. The powers of this board are not very clearly defined, but still the board is subordinate to the Porte; and occasionally, in matters of considerable importance to British commerce, a very great exertion of the influence of this embassy with the Porte, and with the ministers of Foreign nations having the same interests as England, may carry a point against the opposition of the French. This, as your Lordship is aware, has recently happened with respect to the passage of steamers in quarantine through the Bosphorus and the Dardanelles. But if it is extremely difficult to obtain proper consideration for the interests of England from a board constituted as is the board of health here, the difficulty in the case of such an international commission as is proposed for the Red Sea would be infinitely greater. The Porte, which has the ultimate control of the board of health here, is accessible to the influence of Great Britain, and feels its responsibility to her. But the proposed international commission would decide all questions without control by a majority of votes. All the Continental Powers now represented in the Cholera Conference would apparently be entitled to send members to the new commission. Many of these have little, if

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any, commercial interest in the Red Sea, while they have an inordinate dread of cholera and an unreasoning faith in quarantine, as well as a great desire to conciliate France. There can be little chance of England's exercising an influence with such Powers equal to that of France, and of course the advantages of abstaining from interference in the politics of the continent cannot be obtained by England without a sacrifice of influence with continental States. Nor do I conceive that, intimate and friendly as our relations are with France, we can safely acquiesce in her having entire control over matters so deeply affecting our commercial interests and the safety of our Indian Empire, as the proposed sanitary measures in the Red Sea. Experience here shows that France is by no means indisposed to use her predominant influence in sanitary matters for the purpose of extending her political influence. She has little or no shipping herself in these waters, except the steam vessels of the Messageries Imperiales Company; and apparently the only commercial consideration which influences the proceedings of her Delegate to the board of health is a desire to promote the interests of that company. Neither her political nor her commercial views in Egypt and the Red Sea are so identical with those of England, as to make it safe for us to acquiesce in her obtaining a predominant influence in the direction of the large and important sanitary measures now proposed. Your Lordship will not fail to observe that one of these is the establishment of a lazaretto at Bab-el-mandeb, which would in fact be a fortress held by a strong garrison, and another the total interruption of communication between Europe and Egypt in case of cholera appearing in that country.

As a choice of evils, I think the proposal to confide the direction to an Egyptian board of health, constituted as the board of health is here, and acting under the control and authority of the Egyptian Government, decidedly preferable to making it over to an uncontrolled international commission. But should Her Majesty's Government agree to this proposal, it would be in my opinion extremely important that they should appoint a man of great knowledge and high ability as their Delegate to the Egyptian board, and should allot to him a considerable salary, and take all other proper means of strengthening his position.

Dated 12th October, 1866.

From—E. C EGERTON, ESQ.,

To—The Under-Secretary of State for India.

I am directed by Lord Stanley to transmit to you, to be laid before Viscount Cranborne, a copy of a Despatch* from the British members of the Cholera Conference at Constantinople, reporting the further proceedings and the close of the Conference.

* No. 37.

No. 37, dated 1st October, 1866.

From—MESSRS. E. GOODEVE AND E. D. DICKSON,

To—LORD STANLEY, M. P.

We have the honor to inform your Lordship that, on the 25th ultimo, the Cholera Conference finished the discussion of the report of the second Committee of the third group of the programme called "Rapport sur les mesures quarentenaires applicable aux provinances choleriques."

This report was received in proof sheets only, and has not yet been properly printed, so that we are not able to forward copies.

The Conference has recommended measures of quarantine and isolation, and the establishment of lazarets; but as we shall treat upon this subject in a report which will follow this, we will not enter into the matter at present.

On the 26th the Conference received the report of the Committee of the fourth group of the programme, *viz*:—Quelle forme définitive la Conférence devrat'elle donner aux résolutions qu'elle aura adoptées?

The form proposed by the Committee and approved of by the Conference consists in a short statement of the work done and in an enumeration of the conclusions adopted by the latter. The report was read in manuscript, and has not yet been printed; we cannot, therefore, forward copies to your Lordship.

The labors of the Conference ended with this report. It was read in the presence of His Honor Aali Pacha, who afterwards with a short speech formally closed the meetings of the Commission.

The Conference held in all 44 meetings. About half only of the protocols have been printed; it is expected that the remainder will not be ready for several weeks.

Dated 18th October, 1866.

From—E. HAMMOND, ESQ,

To—The Under-Secretary of State for India.

I am directed by Lord Stanley to transmit to you, to be laid before Viscount Cranborne, the accompanying copy of a Despatch from the British Cholera Commissioners, reporting the result of the labors of the International Sanitary Conference.

I am to add that the Despatch having been printed, you can be supplied with as many copies as Lord Cranborne may desire.

P. S.—I likewise enclose copies of a letter which Lord Stanley has addressed* to Dr. Goodeve and Dr. Dickson, approving their conduct in the International Sanitary Commission, and of a Memorandum* by Dr. Goodeve respecting the reports of the Commission which have not yet been furnished to Her Majesty's Government.

* Dated October 18th.

[Confidential.]

No. 38, dated 3rd October, 1866.

From—DOCTORS E. GOODEVE AND E. D. DICKSON,

To—LORD STANLEY.

The International Sanitary Conference has terminated its labors, and we beg, therefore, to lay before your Lordship a statement of the work performed by it. We propose to include in this an abstract of the opinions of the Conference upon the most important points connected with the origin and spread of cholera, and the means of preventing its diffusion; and finally to state our opinion upon the influence of those measures on the public health, and their bearing on the maritime communications of Great Britain.

The powers represented at the Conference, and the number of Delegates sent by them, were as follows:—

Austria, represented by		3	Delegates.	Italy, represented by		3	Delegates.
Belgium	„	1	„	Holland	„	3	„
Denmark	„	1	„	Persia	„	2	„
Spain	„	2	„	Portugal	„	2	„
Papal States	„	2	„	Prussia	„	2	„
France	„	2	„	Russia	„	3	„
Great Britain	„	3	„	Sweden	„	2	„
Greece	„	2	„	Turkey and Egypt		3	„

The British Delegates at the commencement were the Honorable William Stuart, Dr. Edward Goodeve, and Dr. Edward Dalzel Dickson. Since the 6th of June, Mr. Stuart having gone away on leave, Great Britain has been represented by the two medical Delegates only.

The Conference met for the first time on the 13th of February. The meeting was opened by His Highness Aali Pacha, Minister for Foreign Affairs, and the first proceedings comprised the nomination of Committees to draw up a programme of work, and to consider a proposition of an urgent nature made by the French Delegates, for regulating the return of pilgrims from Mecca in the event of cholera breaking out in the Hedjaz during the pilgrimage of this year.

The discussions on this proposition delayed the commencement of the real work of the Conference until the 8th of March, when the pro-

gramme was adopted, and the work divided into four parts or groups, *viz* :—

1.—Origin and development of cholera.

2.—Mode of its propagation.

3.—Measures of preservation.

4.—Form into which the resolutions adopted by the Conference were to be embodied.

The time of the Conference has been occupied since the above date in studying, through Committees, and discussing fully the above-mentioned subjects. The Committee appointed for the study of the two first-mentioned groups was composed of all the medical Delegates, with three diplomatic members; while the Committees for the remaining groups were formed indiscriminately of diplomatic and medical members.

These several Committees presented six reports to the Conference, *viz* :—

1.—On the origin and propagation of cholera.

2.—A historical sketch of the epidemic of 1865.

3.—On measures of hygiene.

4.—On measures of restriction.

5.—On measures specially applicable to the East.

6.—On the form to be given to the resolutions of the Conference.

At the instance of the French Delegates, the Conference discussed also the revision of the Ottoman sanitary tariff, and made a report thereon; but in which discussion at least one-half of its members (including ourselves) took no part.

Origin of Cholera.

With reference to the origin of cholera, the Conference has pronounced that it is not a native of Europe, and that it has no spontaneous origin there. That the various epidemics which have devastated the world have always proceeded from India, and have been easily traced back to that source. It has not been able, however, to give any opinion as to the mode of its origin in India, but contents itself with stating that cholera exists there permanently or in an endemic form. The idea that it originated in the soil of the delta of the Ganges was a favourite one at the commencement of the meetings; but this opinion has been much weakened, if not altogether set aside, by the arguments which we have been able to bring forward against it; and the belief that it depended upon neglect on the part of the British Government in not keeping up in an efficient state the hydraulic works made by their predecessors has been entirely abandoned.

We beg here to note that, in our opinion, the maintenance of cholera permanently in some parts of British India is not due to any peculiarity

of the soil, but simply to the continued transmission of a communicable disease, perpetuated in localities which abound in unhealthy (but remediable) conditions engendered by man under the influence of a favoring climate. We do not attach to the word *endemic* any expression of the *mode of origin*, but we understand by it simply the fact of a permanent repetition of the disease.

Some discussion arose as to whether cholera was present in an endemic state in other parts of the East; but it was considered by the majority that proof of this was wanting. It was shown, however, that cholera has frequently prevailed in Persia; so much so as to offer grounds of suspicion that it had got *acclimated* there; but its presence probably owes this frequency to repeated importations from India. The south and south-east coasts of Arabia have been classed as *doubtful* endemic centres; but, in reality, though cholera is probably very common in those regions, we do not know much about them.

On the whole, there is no satisfactory evidence which proves that cholera exists in a permanent state anywhere except in India, from whence have radiated the epidemic streams that have spread over the world.

Transmissibility.

The Conference has declared that cholera is a disease transmissible from man to man, propagated in a special manner, and diffused in proportion to the frequency of human intercourse. It may be communicated by patients having confirmed cholera; and also by those suffering from only choleraic diarrhœa, and who are able to move about, and are, to all appearance, in a state of health.

The mode of infection is considered to be mainly, though not exclusively, through the discharges from the stomach and bowels, which may pollute air or water, and thus bring the infection within range of a large number of persons, without the necessity of *actual contact*. This peculiarity, and the manner in which apparently healthy individuals may become the unsuspected vehicles of the disease, explains the obscurity which has long been attached to the question of the transmissibility of cholera; and has solved the former difficulty, encountered while endeavouring to trace its passage, in instances in which the connecting link of infection was absent.

Incubation.

The time that elapses between exposure to infection and the manifestation of cholera, without previous diarrhœa, is probably not more than a few days; but some doubts still exist as to the duration of choleraic diarrhœa; though in cases so commencing, this stage, in the opinion of the Conference, seldom exceeds *eight days* without showing decided indications of cholera. Hence the separation of such cases for a term of *ten days* from the sources of infection would be sufficient, in the great majority of the instances, to decide whether they will pass into cholera or not. Some of the Delegates maintained that this diarrhœal period

might extend *beyond a fortnight.* But without denying the possible occurrence of such exceptional cases, the majority of the Conference was not satisfied that the evidence adduced in their support was satisfactory, and that for practical purposes it would not be justified to propose measures based upon such questionable examples.

Fomites.

The cholera poison may infect articles of clothing, houses, ships, &c., and in certain conditions be retained by them in a dormant state for a long time. These may communicate the poison to healthy individuals coming within their range, and, if movable, may convey it to distant localities.

There is no proof of infection having been given by merchandize or animals, but the Conference admits the *possibility* of such an occurrence.

Although the Conference recognizes the diffusion of the disease by human intercourse, it also admits that *unhealthy local conditions* intensify cholera epidemics. These prevail mostly in places with overcrowded populations condemned to breathe foul air, to drink impure water, and to live upon soils impregnated with decomposing, organic, and especially excrementitious matters. The Conference, therefore, does not think that transmissibility is the sole point to be guarded against, but that the utmost care should be taken that, when cholera is introduced into a place, it do not meet there a soil favorable to its development.

Briefly, it may be said that the Conference is of opinion that cholera is the product of India; that it accompanies man in his migrations; that it is carried in all directions by his agency only, and in rapidity corresponding with his movements; and that it develops itself most severely in those places which abound in bad sanitary conditions.

Measures of Prevention.

Upon the foregoing considerations the Conference has framed its measures of preservation. These comprise—

Measures of hygiene.

Measures of disinfection.

Measures of restriction.

The measures of hygiene recommended by the Conference are such as are generally known, and with the details of which we will not trouble your Lordship. They demand for every man pure and abundant air, pure water, and a pure soil. The Conference believes that these elements should constitute the permanent privilege of populations, and that their attainment should not be postponed until cholera epidemics threaten *closely,* or are actually in the midst of unhealthily-situated people. They are conditions, however, which cannot be created in a moment—they can only be the work of time.

Measures of disinfection are intended to destroy the cholera poison, and prevent it from exerting an injurious influence on healthy persons. They are applied to purify articles of clothing, buildings, ships, and goods that have been contaminated. Another great object proposed to be attained by disinfectants is the destruction of the chief source of the malady, by operating directly by chemical agents upon the discharges of the cholera sick, and thus preventing them from evolving its poison.

The thorough disinfection of ships is in elaborate process, requiring the *unloading* of the vessel, and is only called for in cases of an outbreak of cholera on board. In other instances the vessel will be subjected to measures of a less troublesome character.

Measures of restriction are intended to separate infected persons or things from the healthy. They comprise—

1.—Isolation of the first cases of cholera which occur in a place, and which may even be applied to exclude infected villages or small towns from communication with their neighbourhood. With perfect isolation, cholera could not assume the epidemic character; but owing to the difficulty encountered in effectually controlling the movements of people, this measure will seldom be practicable in Europe.

2.—Interruption of all communications with an infected port or district throughout the duration of the epidemic. This is considered a measure only applicable to exceptional cases.

3.—Quarantine.

(A.)—Quarantine upon arrivals *by sea:* The Conference has fixed upon *ten days* as the period of quarantine, believing that this term will meet the requirements of every case without exacting more from commerce than the public safety demands.

A longer period of probation was proposed by some of the members, chiefly in consequence of the difficulty encountered in detecting the existence of choleraic diarrhœa among crews and passengers of ships; but this proposal was rejected by the Conference, on account of its being based upon a theory which, if accepted, would give no limit to the length of quarantine. The Conference has, therefore, adapted its system of restriction to the condition of the vessel coming from an infected port; exacting the full ten days, and even a prolonged term of quarantine, from ships having the malady on board, or that are foul from overcrowding, &c.; and favoring those which present good sanitary conditions, and allowing them, in special cases, even to count the days occupied in the voyage as part of the term of their quarantine, *viz.*, vessels carrying a surgeon, whose duty it will be to superintend the execution of certain measures of hygiene, and to testify to the state of health of the persons on board. While, moreover, vessels whose crews and passengers have enjoyed good health during a prolonged voyage of 15 to 30 days will perform only *five* days' quarantine, and those that have been at sea more than *thirty* days will, on their arrival, be detained only 24 hours.

Quarantine, as applied to ships, has been divided into two categories :—

1.—Quarantine of observation ; which implies the seclusion of a vessel, with its cargo and passengers, for a limited period, with disinfection of the ship, wearing apparel, and goods supposed to be of a susceptible nature, but without the disembarkation of non-susceptible goods and passengers into the lazaretto. To this category belong vessels in a healthy state, and which are free from over-crowding.

2.—Strict quarantine (" quarantine de rigueur") ; which requires the discharge of the cargo and landing of all passengers into the lazaretto, followed by a thorough cleansing and disinfecting of the ship. This quarantine is only applied to vessels that have had cholera or choleraic diarrhœa, and to those over-crowded with passengers, more especially with pilgrims, emigrants, or troops.

(B).—Quarantine upon arrivals *by land :* Owing to the difficulty of efficiently maintaining it, this can seldom be successfully applied. The instances quoted by the Conference in which it might be useful are those of persons moving in masses, such as pilgrims, emigrants, and troops. Its duration will vary from *eight* to *ten days*, according to the distance whence the arrivals come, but will never be less than *ten* days for pilgrims, emigrants, and troops.

Lazaretto establishments for the isolation of persons and the disinfection of goods are a necessary accompaniment of all quarantine institutions. They are now proposed to be constructed upon a plan and scale that will render them much more healthy than those of the old system ; and the Conference has expressed a hope that they will be rendered as comfortable and agreeable as possible, and that they shall be regularly and frequently inspected to insure their being kept in good order. They will be placed in *isolated* situations (upon islands if possible), so as not to become sources of danger to populous towns or districts in their neighbourhood.

It is proposed that every vessel shall be furnished with a bill of health, delivered by the *local sanitary board ;* and that to avoid abuses, the *consular* bills of health shall henceforth be suppressed, and that instead, the Consuls should inscribe their *visa* upon the local document.

The Conference is, moreover, of opinion that the *very first* case of cholera which manifests itself in a place should be *noted upon the bill of health ;* and that mention should continue to be made of the epidemic while it lasts ; and that *fifteen days* should be allowed to elapse after its entire cessation before admitting arrivals from the compromised locality into free pratique. The bill of health, moreover, must not be *exchanged* for a new one, until the vessel has reached its ultimate destination ; and it is recommended that this document should be printed in *two languages,* French and that of the place of departure ; and that it be drawn up according to the model given by the Paris Sanitary Conference.

Finally, to prevent false declarations being made by captains of vessels on their arrival in a Turkish port, the Conference has expressed

a hope that the Ottoman Government will enact, with the least possible delay, a *Penal Code* to meet infractions against its sanitary regulations.

Although the Conference has devised measures for arresting the progress of cholera in general, it declares that the most important for the preservation of Europe are those directed to stop its development in India, and check its progress towards Europe; and that the efficacy of these measures is greater the nearer they are applied to the sources from whence the malady issues.

The Conference infers from our present knowledge that the most effectual means of checking the development of cholera in India consists in the continuance and extension of the measures of hygiene commenced by the British Government, and in the general application of the rules, slightly modified, which now regulate Hindoo pilgrimages. It wishes also to impress on the Indian Government the great advantages that might result from its undertaking researches on the origin, endemicity, and epidemicity of cholera, and which might possibly lead to the discovery of a way of exterminating the disease—the great object to be attained.

To check the progress of cholera westward, measures by land and by sea are proposed. Those by land commence with restrictions on the frontiers of the Punjab, and are extended to Persia, Central Asia, and the confines of Russia. Those by sea are applied to the usual cholera routes through the Persian Gulf and Red Sea. The rules of ordinary quarantine are deemed sufficient for the shores of the Persian Gulf; but a more elaborate scheme is devised for the Red Sea, affecting, on the one hand, the passenger traffic between India and Suez, and on the other, the movements connected with the pilgrimage to Mecca. All vessels entering the Red Sea would be inspected at Perim. Those bound to Suez would, if necessary, perform quarantine at Tor, while pilgrim-ships would be detained in quarantine at some station (not yet determined) in the vicinity of the Straits of Bab-el-Mandel; and they would, moreover, have to comply with the regulations of the "Indian Native Passengers' Act" of 1858, to which a few slight additions have been made by the Conference.

At Mecca measures of safety will be adopted similar to those employed by the British Government at the Hindoo shrines.

The Western pilgrims on their return would perform fifteen days' quarantine at El-Wesch, should cholera have broken out in the Hedjaz during their stay; and the land caravans would, in like circumstances, be inspected before entering Egypt or Syria, and, if necessary, perform quarantine also.

The above measures are to be carried out under the control of an international sanitary board.

Thus cholera is to be checked, step by step, in its course along the pilgrim-trains, as well as in the ordinary communications of the Red Sea; and should it finally reach the Egyptian territory, it is proposed to

put that country under an *interdiction*, and interrupt all intercourse between it and the Mediterranean during the whole period of the duration of the epidemic; the *mails* only being allowed to pass onwards.

The checks to the progress of cholera by the Red Sea, could they practically be enforced, would probably prevent any further importation of the malady through that channel. But the obstacles opposed to its march through Persia, and the Northern route, are far less likely to be efficient, owing to the much greater difficulty of arresting its progress by land.

According to our view, this is much to be regretted. We think that this channel is quite as important as that of the Red Sea; for, with the exception of the epidemic of 1865, it is by the Persian and Northern routes that cholera has always invaded Europe.

From the foregoing statement it will be apparent to your Lordship that a large share of the measures proposed by the Conference are directed towards India, and the cholera routes between India and Europe. The responsibility which attaches to India as being the source of the disease, and its connections with Europe, have been prominently brought forward by the Conference.

Impressed with the events of 1865, it has directed especial attention to the Red Sea channel, and above all to the Mahomedan pilgrims. We propose to consider in what manner the danger, if any, has increased of late years.

The ordinary traffic between India and Suez is not likely to be more dangerous now than it has been for the last twenty years, during which steam communication has been in constant operation. The pilgrim traffic between India and the Hedjaz continues to be carried on in nearly the same manner as heretofore: steam-transport being very little employed in it. In 1865 only four steamers were freighted for this purpose: they carried 894 passengers out of the 20,000 *Eastern* pilgrims said to have visited Mecca, and they had no cholera deaths amongst their crews or passengers. If any new source of apprehension, therefore, has arisen, it must lie in the application of steam-transport between the Hedjaz and Suez, and which is now largely employed for the conveyance of pilgrims. The crowding of these boats and the short duration of their passage have certainly increased the risk of an importation of the disease into Egypt, whenever it occurs in the Hedjaz during the season of the pilgrimage.

The Conference has dwelt on the dangers of the port of Singapore as a focus of cholera and a centre of dissemination. We think, however, that there is misapprehension on this point. When cholera is epidemic in the Malayan peninsula and islands, it may exist also at Singapore, owing to its commercial intercourse with the surrounding countries; but, in general, Singapore is a place remarkably free from cholera, and it can therefore seldom become a centre of emission. Cholera existed there in 1864, previous to the sailing of the pilgrim ships for the Hedjaz. The only vessels having had cholera on board, and of which we possess

any accurate account, are the *Persia* and *North Wind*; both of which, although originally sailing from Singapore, caught the disease at Mokalla, a town on the south-eastern coast of Arabia. The public mind, without paying sufficient attention to this latter circumstance and to the length of the voyage between Singapore and Jeddah (fifty to sixty days' sail), ascribed the importation of cholera into the Hedjaz directly from Singapore. Without denying the possibility of a direct importation from India, we believe that the main danger to the Hedjaz lies in the propagation of the disease from the eastern and southern coast of Arabia.

Such, my Lord, is a brief outline of the opinions expressed by the Conference on cholera, and on the measures of preservation proposed against it.

We now beg respectfully to offer a few observations of our own on this subject.

The Conference has fixed on *ten days* as the term of quarantine for maritime arrivals from an infected port. If this rule be adopted throughout Europe, it will greatly embarrass and delay our communications with the neighbouring continent; nor would it be of much use when applied to one Continental state while its communications *by land* with other states remained free; still, if such checks could be tolerated, they would increase the chances of keeping out the malady, and people moving in masses, such as emigrants, might be submitted to this restriction without much inconvenience. But if quarantine cannot be carried out between England and the continent, still it might be advantageously enforced in the communications between England and the Mediterranean, and between England and America.

The proposed system of quarantine will fall severely upon vessels having cholera and upon those that are in bad sanitary conditions, and the measure will be most felt by vessels performing *short voyages*, while first-class ships, and those that make *long voyages* and are in a healthy state, will have the delay materially reduced.

From the unfrequency of cholera in Europe these restrictive measures would not be felt there so much as they would be on our communications with India. Bombay and Calcutta are never exempt from cholera, and could never give a *clean* bill of health; hence these measures will be constantly in force against them. Fortunately, by the arrangement which allows well-conditioned and healthy ships having a surgeon on board to reckon the voyage as part of the quarantine, passenger-boats that go from Bombay to Suez in twelve days, and from Calcutta to Suez in twenty days, when free from cholera, would only meet with a detention of twenty-four hours at the latter port,—a delay which we think might safely be dispensed with, as it causes inconvenience to the vessel, without allowing sufficient time for the discovery of any latent sickness lurking on board. We further beg to observe that should the proposed *interception at Perim*, for the purpose of interrogating vessels, be abandoned, the twenty-four hours' stoppage at Suez

would not, in ordinary circumstances, materially interfere with our passenger traffic through that line ; but the case would be very different on the contemplated route by way of the Persian Gulf, where the advantages of a shortened voyage between Bombay and the head of the Persian Gulf would be lost by the increased delay applied to ships on their arrival there, so as to complete their term of ten days' quarantine, including the time of their passage.

We may here remark that, independently of self-preservation, India has strong inducements to make every effort to banish cholera from its chief ports, and especially from its future great point of communication with Great Britain, Bombay.

The objection we entertain with regard to the twenty-four hours' detention at Suez is even more applicable to vessels sailing from India by way of the Cape of Good Hope. These are sometimes three or four months at sea, and up to the present moment have never carried the disease to England, nor have they ever been subjected to any restrictive measures whatever.

As a general rule we could not admit the practicability of foreign interference in the local administration of any State, whether in sanitary matters or otherwise, and whether this applied to our own possessions, or to those of the Ottoman Government. We, therefore, could not join in the vote of the Conference for international institutions in the Red Sea.

Tor, the proposed lazaretto station for passenger ships having cholera or in bad sanitary conditions, is too far distant from Suez (more than 100 miles); this inconvenience will not be felt however by the passenger-boats coming from India in a *healthy* state, as the twenty-four hours' detention will not be applied at Tor, but at Suez.

The interruption of all communication with Egypt, should cholera break out there, is a measure which, if ever enforced, will most seriously affect our traffic through that land. Apart from the political and commercial interests involved in this question, masses of passengers, many of them invalids, would accumulate in Egypt for weeks or months, without the possibility of finding accommodation, and exposed to the dangers of an unsparing epidemic. A large proportion of these sufferers would be afflicted with severe tropical diseases, and seeking Europe at a great sacrifice as the only means of restoring health, and saving their lives. Whether these sick persons are detained in Egypt during its unhealthy season, or warned of this interruption, are forced to remain in the Indian climate, their lot will be a most deplorable one, often aggravated from want of means to procure the comforts and even the necessaries of existence. The above picture will, in a great degree, also apply to reliefs of troops, which are in future to take the overland route.

We are of opinion that this extreme measure might be obviated without danger to Europe by allowing the overland passengers to pass through Egypt in *quarantine trains*, on condition of their performing afterwards the usual quarantine at the port of their destination.

We now beg to call your Lordship's attention to the pitiable condition of the Indian pilgrims in the Hedjaz during their pilgrimage. Men, women, and children are there exposed to every kind of hardship, to want of shelter, famine, disease, extortion, and pillage, and are often forced to sell their liberty for two or three years to enable them to procure the means of returning to their homes. We do not know to what extent Her Majesty's Indian subjects share in these lamentable hardships; and it is possible that, under the common name of Indian pilgrim, the greatest number of the sufferers belong to foreign States. We think that we have heard enough about them to prompt us to suggest respectfully to your Lordship that this question, as it affects British subjects, might be made a matter for special and careful inquiry, and that steps might be taken to prevent the recurrence in future of such disastrous scenes.

In conclusion, we beg to submit to your Lordship our opinion as to the utility of the work in which we have been privileged to share.

The Conference has pointed out all that is positively known with regard to the origin of cholera. It has shown the disease to be the product of one country, has declared its transmissibility, and established the mode of its propagation. It has traced its routes, and pointed out the best mode of checking its progress. It has raised hopes that by a judicious combination of measures of hygiene and restriction of intercourse, the disease may be averted; and encourages us to believe that cholera is not an overwhelming force against which man is helpless, and to which he must submit without effort, but rather an evil that may be overcome by a combined action of various Governments, directed with energy and perseverance.

Although we have not shared in all the opinions or given our assent to every measure proposed by the Conference, yet we think that it has pointed out the true manner of meeting cholera, and we cannot but believe, with all humility, that if its recommendations are thoroughly carried out, they will avert the evil, and contribute largely to the preservation of mankind.

Dated 18th October, 1866.

From—LORD STANLEY,

To—DOCTORS E. GOODEVE AND E. D. DICKSON.

have to acknowledge the receipt of the British Cholera Commissioners' Despatch No. 38 of the 3rd instant, and I beg to thank you for the very able and clear report which it contains of the labors of the International Sanitary Commission.

I have at the same time much pleasure in expressing to you the approval of Her Majesty's Government for the attention which you have shown in the Commission.

Charing Cross Hotel, Strand, October 18th, 1866.

To—The RIGHT HON'BLE E. HAMMOND.

Dr. E. Goodeve presents his compliments to Mr. Hammond, and begs to inform him that the printed reports of the Conference unsent up to the time of his leaving Constantinople on the 5th instant, were "Mesures quarentinaires applicable aux provenances Choleriques," "Apercu general de la marche et de la propagation du cholera en 1865," and the report of the Committee and Conference on the 4th group of the programme.

The two first will probably arrive with the messenger who left Constantinople on the 10th of this month. The third is mainly an enumeration of the conclusions and recommendations of the Conference, with the votes attached to each resolution. This last document cannot be sent just yet, because it has to be made up from the printed reports of the protocols of the meetings. Of these protocols about one-half only of the 44 were printed up to the 5th October. It is, therefore, probable that some weeks from that time will elapse before the remainder is issued and the enumeration abstracted and printed.

The above mentioned three reports and the 20 or 21 protocols will close the documents issued by the Conference.

Dated 9th November, 1866.

From—HERMAN MERIVALE, ESQ.,

To—*The Under Secretary of State for Foreign Affairs.*

I have laid before the Secretary of State for India in Council Mr. Murray's letter dated 22nd September last, communicating, for the observations of Viscount Cranborne, a letter from the British Delegates at the Cholera Conference at Constantinople, reporting the recent proceedings of the Conference, together with a Despatch from Lord Lyons, pointing out the objections to the proposed constitution of an International Commission for the supervision of sanitary measures in the Red Sea.

2. The Report of the British Commissioners, which accompanied Mr. Hammond's letter of the 18th ultimo, and which contains a concise and highly interesting resumé of the proceedings of the Cholera

Conference, has at the same time been under the consideration of Lord Cranborne.

3. The proceedings of the Conference which more directly concern England are ranged by the British Delegates under the following heads :—

Suggestions regarding the extinction of cholera in India.

Measures for preventing the exportation of cholera from India, and those proposed for arresting the passage of the disease between India and Europe.

The principal measures proposed by the Conference under the two first heads are the better regulation of the Hindoo pilgrimages in India, the prohibiting of Mahomedan pilgrims quitting India without a passport, and the extension of the provisions of a local Legislative Act regulating the number of passengers which the pilgrim ships leaving India are competent to embark. Lord Cranborne will be ready to bring these various suggestions to the notice of the Government of India, by whom he feels assured they will be considered with every desire to carry out as far as possible the objects proposed by the Conference; but he would only now remark that the extension of the Native Passengers' Act in the manner proposed by the Conference would appear to be beyond the competence of the Government of India, and that the consent of the foreign Governments concerned would probably be required before they could be carried out to their full extent.

Lord Cranborne entirely concurs in the objections so forcibly stated by Lord Lyons to the delegation to an International Commission of the control of the sanitary arrangements in the Red Sea. His Lordship, having regard to the extreme importance of guarding as far as possible against the introduction of the cholera into Europe, is not prepared to object to the subjection of Indian pilgrims to any necessary measures of inspection and quarantine. But, considering the extreme sensitiveness of the Mahomedans of India to all measures which have the least appearance of interference with their religious observances, it is absolutely necessary that any measures of quarantine against the spread of the cholera should impose as little restriction as possible on the freedom of their movements either going to or returning from their places of pilgrimage; and it is not to be expected that the requisite caution in this respect would be exercised by a Commission composed for the most part of members who have little acquaintance with Mahomedan feelings and usages; and who, while anxious above all, to promote the wishes of their respective Governments by preventing the spread of the cholera to Europe, would feel little interest in the effect which their measures might have on the minds of the Mahomedan subjects of other powers. In this view the suggestion of M. Keun, the Dutch Delegate, that the regulation of measures of restriction imposed on Mahomedan pilgrims should be enforced by the Egyptian Government seems eminently worthy of adoption.

With regard to the selection of a site for the inspection and quarantine stations for Indian pilgrims, it would seem desirable that the two stations should be placed as closely as possible in juxta-position, and the island of Camaran recommended by the British Delegates and noticed not unfavorably by the Committee of the Conference would seem not unlikely to fulfil the conditions requisite for the double purpose in view. On this point, however, Lord Cranborne would be quite prepared to acquiesce in any decision to which, after full enquiry, Lord Stanley might give his assent.

The proposed establishment of a quarantine station at Tor, at which all ships bound for Suez should be compelled to stop, seems to Lord Cranborne quite unnecessary. His Lordship is not aware that the cholera has ever been brought into Egypt by any of the mail steamers from India; and, at all events, it would seem a sufficient precaution that ships coming up the Red Sea should be subjected to sanitary inspection at Suez or its immediate neighbourhood.

The delay which would be caused by the necessity of proceeding to Tor, or any other station at a distance from Suez, would be highly objectionable in the case of mail or passenger ships from India; and even should the proposed board of health not be constituted at Suez, the Egyptian Government would doubtless be prepared to appoint a special sanitary officer at that port, to whom the duty of visiting all ships from India and of enforcing proper measures of quarantine might safely be entrusted.

Lord Cranborne is of opinion that, in the case of mail packets and other vessels sailing under contract with the Government, the power of enforcing quarantine should be conceded only in cases of absolute necessity. The British Commissioners have very properly pointed out to Lord Stanley that any detention of such vessels upon the ground of the presence of cholera at the port from which they had sailed would involve a constant and most serious interference with the communications between India and this country. Bombay and Calcutta could never be pronounced to be absolutely free from cholera, and if quarantine could be inflicted, because such ports were unable to furnish a clean bill of health, it would be uniformly applied to all vessels of the class referred to, no matter what the actual condition of the passengers might be. It would be very unadvisable to consent to the detention of such vessels, except when the disease was actually present on board, or when the surgeon should certify that some case of it had occurred during the voyage. Even under those circumstances it might be desirable to adopt the suggestion of the Commissioners that overland passengers should be allowed to proceed by "quarantine trains."

Lord Cranborne notices with great regret that both the Committee of the Cholera Conference and the Conference itself have, though not indirectly affirmative terms, recorded the opinion that all intercourse between Egypt and Europe, in the event of an outbreak of cholera in the former country, should be suspended during the whole duration of the

epidemic. The serious disturbance to the relations between this country and India which would be caused by such a measure, and the inconvenience and suffering which it would cause to individuals, are so great that Lord Cranborne is constrained to express his earnest hope that Lord Stanley will refuse, under any circumstances, to give his assent to the proposal. It is not to be expected that the steam ships which convey the mails and passengers from India shall be exempted from such reasonable measures of restriction as are ordinarily employed to prevent the spread of disease from one country to another; but Lord Cranborne can scarcely believe that a recommendation, based so evidently upon an unreasoning dread of cholera, and on an entire disregard of all opposing considerations, will secure the support of any of the European Governments, and at all events he trusts that if it should be brought under the consideration of Her Majesty's Government it will, in the interests of India alone, be met with a decided negative.

Lord Cranborne, in conclusion, notices with gratification that the idea of interfering during the prevalence of cholera with the departure from the Arabian coasts of Indian pilgrims has been relinquished by the Conference, and His Lordship has only therefore to request that, at the proper time due care may be taken that the sanitary regulations of the ports of embarkation in the Hedjaz are not such as practically to place undue restrictions on the movements of the pilgrims in question.

P. S.—It is requested that 12 copies of the despatch from the British Cholera Commissioners to Lord Stanley, No. 38, dated 3rd October last, may be transmitted to this Office.

Dated 20th October, 1866.

From—E. HAMMOND, ESQ.,

To—The Under Secretary of State for India.

I am directed by Lord Stanley to transmit to you, to be laid before Viscount Cranborne, a copy of a Despatch* from Dr. Dickson, enclosing copies of Protocols and of a further Report of the International Sanitary Conference.

* No. 39, October 9th.

No. 39, dated 9th October, 1866.

From—DOCTOR E. D. DICKSON,

To—The RIGHT HON'BLE LORD STANLEY.

I have the honor to inform your Lordship that Dr. Goodeve left Constantinople on the 4th instant for London by way of Kuslerdji.

I herewith enclose copies of Protocols Nos. 21, 22, 23 and 24, and copies of the Report of the second Committee on the 3rd group (measures quarantinaries.)

The annex to Protocol No. 23 (historic sketch of the epidemic of 1865) has not yet been distributed. As soon as I shall receive it, I will forward copies to your Lordship.

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 21, OF THE 28TH OF JUNE 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its twenty-first meeting on the 28th June 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

For Belgium:

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Professor of Clinical Medicine in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Portugal:

Councillor Dr. Barnardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Russia:

Dr. Pelikan, Councilior of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, and Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperior School of Medicine at Constantinople, and Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector General of the Ottoman-Sanitary Department, Member of the Superior Council of Health at Constantinople.

For Egypt:

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at one P. M.

Dr. Polak informed the Conference that official documents which had just been forwarded to him by his Government, placed him in a position to acquaint the Conference with the result of the quarantines, during the last epidemic, at Venice, Martinschizza (Croatia), and Meglina (Dalmatia). These particulars formed the sequel to the analogous information furnished by him at the last meeting regarding Trieste. From them it appears: 1*st*, that at Venice (report of the central maritime office of the town, dated the 31st May 1866), the number of persons in quarantine in the lazaretto of Poveglia and the basin of the port of Chioggia, was 2,353, of whom 2,039 were undergoing a quarantine of observation, and 314 (250 guards of health being with them)

the rigorous quarantine. Among these 2,353 persons in quarantine, one only became ill of cholera on the 17th August, the third day of his stay in the lazaretto. He was a sailor, and no case had been reported during the passage of the ship to which he belonged. No case of disease occurred *after pratique.*

2nd. That at Martinschizza (report of the superintendent of the maritime lazaretto) the total number of persons in quarantine amounted to 1,321. No case of cholera occurred during or after observation. Two sailors, ill of cholera, who had come from Ancona, were landed at the lazaretto. One of the two died.

3rd. That at Meglina (report of the superintendent of the maritime lazaretto) the number of persons undergoing quarantine amounted to 292. Two cases had occurred during the passage; none while the passengers were under observation in the lazaretto.

Dr. Polak reminded the Conference, in connexion with this matter, that the Austrian sanitary laws contained no provision regarding measures of quarantine to be adopted against cholera. During the last epidemic, however, a quarantine of observation of seven days had been established for arrivals from suspected or infected countries; this quarantine being reduced to forty-eight hours after a passage of fourteen days. When cases of cholera were reported as having occurred during the passage, and also when a ship was under a foul bill of health, the rigorous quarantine was applied as for yellow fever.

Dr. Baron Hübsch asked whether, after this communication, the Conference thought there would be any inconvenience in making the report of the General Committee public.

Count De Lallemand announced his intention of making a similar motion, not only with regard to this report, but with reference to all the proceedings of the Conference, and said that he had only been waiting for the completion of the revision of the report by Dr. Fauvel to press his motion, but he did not think he could defer it any longer after what had just been said by Dr. Baron Hübsch. The French Government had all along thought that the publication of the proceedings of the Conference was necessary, but at the same time that the Conference, which was the sole Judge of the fitness of doing so at a certain time, alone could take the initiative in the matter.

Count de Lallemand believed that the moment had arrived to discuss the question of publicity: having concluded the preliminary etiological studies which it was necessary should be taken up before coming to measures of application, it would be well if the public were at once made acquainted with the result of these studies, which would form the base and foundation of the labors of the Conference.

After some remarks made by Drs. Lenz, Bykow, Pelikan, and Dickson, regarding the mode of this publication, the timeliness of which they did not dispute, Dr. Fauvel pointed out that the question was not whether the Conference should take upon itself the duty of this publication: the whole question was to know whether it authorised it.

Count de Lallemand thought that the Conference ought to confine itself to declaring that it did not oppose the publication of its proceedings.

The proposition thus framed was put to the vote and carried unanimously.

Dr. Fauvel asked whether members who were temporarily compelled to leave a meeting and were unable to be present at a division, might leave their votes in writing.

Dr. Monlau having objected that such a mode of voting would be irregular and contrary to the practice in legislative assemblies, a conversation upon the subject ensued between Dr. Polak, Professor Bosi, M. Segovia, Dr. Pelikan, Dr. Bartoletti, and Dr. Maccas; it was finally decided that members absent during a division could not vote by proxy, but that they might at the next meeting, make known their views and have them entered in the minutes. It was understood, however, that these late declarations could have only a moral effect, and that, no matter how numerous they might be, they could not any way invalidate a vote to which they referred.

Dr. Fauvel remarked, on the other hand, that he had often had occasion to observe since the discussion of the Report of the General Committee had commenced, that some members, merely because they did not happen to agree with a paragraph of a chapter, thought themselves bound to refrain from voting altogether, or even to vote against the chapter in its entirety, though they approved its conclusion. Dr. Fauvel thought that, in such cases, the chapter should be voted for, care being taken to point out that a reserve was made in regard to certain views upon certain points; it had been decided, it was true, that a vote could not be modified, but that was only during the scrutiny, and every body had the right, before the scrutiny commenced, to make such a declaration.

No objection was made to these remarks.

M. Keun announced that his honorable colleague, Professor Van Geuns, taking advantage of leave of absence given him by his Government, had been obliged to return to Holland for a time, but that he had left in the firm hope of returning to Constantinople in time to be able still to share in the labors of the Conference.

Dr. Fauvel then read the question and conclusion of Chapter XXIII.

Dr. Polak proposed that the word *emigrations* should be added after the word *pilgrimage* in the conclusion; emigrations seemed to him to be, with armies, fairs, and pilgrimages, one of the four surest means of the propagation of cholera.

Dr. Fauvel replied that Chapter XXIII. related only to the propagation of cholera by land. Emigration at the present day, he said, was not carried on as it used to be, by great masses, entire nations, but by small fractions of people, and by sea. And the trans-

mission of cholera by ships was treated of in another portion of the report.

Dr. Monlau declared that henceforth he would abstain from voting upon the text of the chapters: this vote and even the discussion of the text appeared to him to be useless after it was agreed, as had been done, that the conclusions might be voted for without there being any necessity for concurring in the text.

The President put to the vote in succession the text and conclusion of Chapter XXIII. Both were adopted, the text by 21 votes against one abstention, and the conclusion unanimously.

For the text:—Dr. Polak, Count de Noidans, M. Segovia, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Goodeve, M. Kalergi, Dr. Maccas, Professor Bosi, Dr. Salvatori, M. Keun, Dr. Millingen, Dr. Gomez, Dr. Mühlig, Dr. Lenz, Dr. Bykow, M. Stenersen, Dr. Baron Hübsch, His Excellency Salih Effendi, Dr. Bartoletti.

Abstention:—Dr. Monlau.

Dr. Fauvel next read the question and conclusion of Chapter XXIV.

Dr. Maccas approved of the distinction established with regard to dissemination, according to the time at which it was effected, that is to say, before or after an epidemic became confirmed. Useful and salutary in the first case, dissemination became, on the contrary, in point of fact, dangerous in the second. Only he thought that, for the sake of greater perspicuity, the word *tardy* should be added to the second part of the conclusion, which consequently should read thus: *but a tardy dissemination would not, &c.*

M. Stenersen feared that the anti-contagionists, relying upon the fact that the Conference, contagionist as it was, could not deny that dissemination in most cases was useless, would find in the chapter under discussion an argument in support of their views, in the same way that persons who deemed all precautionary measures useless against cholera would find their system justified in it. If, they would say, dissemination, without diminishing the danger, only served to put back the fatal moment, would it not be better to remain quietly at home, accepting the chances of dying a little sooner? For these reasons, M. Stenersen thought it would be useful slightly to modify the wording of the chapter. Might not some modification be made in what was said regarding the inefficiency of dissemination when tardy? For instance, in the first paragraph, after having said that "dissemination in such a case "diminishes the chances of propagation in the entire mass attacked," could not the following sentence be added:—"*As has been seen frequently, and notably on the occasion of the last epidemic at Constantinople*"? And similarly after the words "but it was effected in a longer "time," might be added the words "*but it is allowable to believe "that if, in this case, the dissemination had been carried out sooner "and under better conditions, it would not have failed to give a "more favorable result.*"

M. Stenersen repeated that he did not mean in any way to attack the argument of Chapter XXIV; he rather, so to speak, addressed a question to the Committee. Was it scientifically possible to modify what had been said of the inefficacy of tardy dissemination? It was peculiarly interesting to Sweden and Norway, the population of which lived almost entirely in the valleys, while the mountains were deserted to have this point cleared up: the inhabitants of the valleys always fled to the mountains on the appearance of cholera; were they right in doing so? did they gain anything by it?

Dr. Salem Bey and Count de Lallemand objected that when the Report spoke of the danger of dissemination it did not allude to the assembled population scattering itself and to whom such dissemination was always beneficial, but to the neighbouring localities in which the emigrants sought refuge.

Dr. Maccas admitted the justice of these remarks, only he did not believe that, when cholera had as yet only shown itself in sporadic cases, the poisoning was so complete that dissemination, which was clearly salutary to the population attacked, was as yet dangerous to the surrounding localities. On the occasion of the last epidemic which had raged at Athens, the few thousands of persons who had emigrated on its outbreak had in no instance carried cholera anywhere with them.

Dr. Monlau thought that in the 2nd part of the conclusion the words "*but that,*" &c., might be struck out: it was clear that persons ought not to carry cholera amongst others on the pretext of saving themselves from it.

Dr. Fauvel believed that dissemination, effected in time, was salutary to the population attacked; later, it appeared to him to be useless. Even then, however, he would recommend it: the population affected would, by the mere fact of being no longer gathered together, be in better hygienic conditions, but the disease would not the less follow its course. As for the localities in which the dissemination took place, there was no doubt it was always dangerous to them, even if the attacks had been very few, for it could never be asserted that there were not some among the fugitives who were suffering from premonitory diarrhœa. To mention an instance: it would be remembered that last year the emigrants who had left Alexandria before the epidemic commenced to prevail, nevertheless carried cholera with them to every place where they sought refuge. Dr. Fauvel, however, explained that no fact could be brought forward proving that tardy dissemination had been advantageous to an attacked population, and that therefore M. Stenersen's question could not be replied to with certainty. Where there was crowding the march of the epidemic was swifter; where dissemination had been effected, it was slower, and, in the latter case, it was impossible, after the cessation of the disease, to assert that it had ceased because of the dissemination. It was quite as probable that it might have ceased for want of aliment, in a word, because such persons as were in a state of receptivity had been attacked. Quite recently,

at Yambo, with regard to which place, it might be said parenthetically, the assertion was confirmed that cholera had been imported by the Africans, the epidemic broke out on the 24th of May, and on the first day carried off forty-seven victims out of a population of some thousands of inhabitants, augmented by four or five thousand pilgrims; on the 26th, it had already reached its greatest intensity, (ninety-nine deaths); but from that day it diminished; 31st May, 15 deaths; 3rd June, 5; 4th, 1; from the 4th to the 7th, none. Cholera raged there among a crowded mass in the worst sanitary condition; it attacked immediately, and, as it were, with the same stroke, all who were in a state of receptivity, and died out in twelve days after having carried off five hundred and thirty-eight victims. If medical men had gone to Yambo on the 1st of June, they would not have failed to order immediate dissemination, and then, no doubt, the cessation of the epidemic would have been attributed to such dissemination. Dr. Fauvel believed that this was the case with all facts of the same kind that could be adduced.

Dr. Maccas persisted that he did not consider there was any danger in dissemination effected when cholera had as yet shown itself only in sporadic cases. In support of the contrary doctrine had been adduced the fact of the emigrants from Alexandria transmitting the epidemic before it had become confirmed in the town, but could it be affirmed that there were not some among these emigrants who had come from infected localities, and had merely passed through Alexandria? Besides, could such dissemination be prevented: in a word, could a stop be put to the emigration, which took place as soon as the first cases of sporadic cholera caused alarm to the population?

Dr. Fauvel replied that the Report could only speak in a theoretical and scientific point of view. It was clear, in point of fact, that emigration could not be stopped, but that was not the question. The Committee only considered this emigration to be dangerous to the yet uninfected localities towards which it was directed.

A division then ensued upon Chapter XXIV; the text was adopted by 20 votes against two abstentions; and the conclusion was unanimously adopted.

For the text:—Dr. Polak, Count de Noidans, M. Segovia, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Goodeve, M. Kalergi, Dr. Maccas, Professor Bosi, Dr. Salvatori, M. Keun, Dr. Millingen, Dr. Mühlig, Dr. Lenz, Dr. Bykow, M. Stenersen, Dr. Baron Hübsch, His Excellency Salih Effendi, and Dr. Bartoletti.

Abstentions:—Drs. Monlau and Gomez.

Dr. Fauvel read the text and conclusion of Chapter XXV.

Dr. Polak explained that he had refrained from voting for the conclusion of this Chapter, because it seemed to him to contradict what was read in Chapter XIX. It was said, in fact, at the end of the first paragraph of that Chapter that cholera had been imported from the

Hedjaz into Egypt by sea; now, in the last paragraph but one of Chapter XXV, it was merely said that the fact was probable.

Dr. Fauvel disputed the statement that the Report asserted in Chapter XIX that in 1831 cholera had been imported into Egypt by sea. It confined itself to saying that if it had indeed been brought into Egypt by the pilgrims, it could have been so brought only by those who had come by sea, the caravan having reached the country uninfected.

The text and conclusion of Chapter XXV were then put to the vote and adopted, the text by twenty votes, with two abstentions, and the conclusion unanimously.

For the text:—Count de Noidans, M. Segovia, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Goodeve, M. Kalergi, Dr. Maccas, Professor Bosi, Dr. Salvatori, M. Keun, Dr. Millingen, Dr. Gomez, Dr. Mühlig, Dr. Lenz, Dr. Bykow, M. Stenersen, Dr. Baron Hübsch, His Excellency Salih Effendi, and Dr. Salem Bey.

Abstentions:—Drs. Polak and Monlau.

Dr. Fauvel read the question and conclusion of Chapter XXVI.

Dr. Pelikan said that though he concurred in the conclusions of the Committee, he thought Pettenkofer's doctrine regarding the influence of the soil in the development of the morbific principle of cholera had not been reproduced with sufficient exactness in the Report.

Dr. Mühlig had the same remark to make. Pettenkofer's researches did not refer to the quality of the soil, considered as a receptacle of the choleraic principle. Pettenkofer had established, what had already been advanced by others before him, that the quality of the soil of a locality was the most powerful among the auxiliary causes of cholera, only he went much further, in so far that he asserted that a soil possessing the qualities described by him was so essential to the development of cholera that, if the choleraic germ were imported into a locality the soil of which possessed opposite qualities, it would be perfectly innocuous. A soil favorable to the development of cholera ought to be, according to Pettenkofer, porous, easily penetrable by water and air impregnated with organic (especially excrementitious) matter, and presenting from time to time a change in the level of the subterranean waters. Now as soon as these subterranean waters receded, when consequently a certain amount of comparative dryness succeeded to unusual humidity, that, according to Pettenkofer, was the most favorable time for the development of cholera. Thus Pettenkofer concluded that two elements were indispensable to the development of cholera: 1*st*, the importation of the choleraic germ into a locality: 2*nd*, a peculiarly constituted soil. Neither the first nor the second of these elements would suffice of itself, the simultaneous action of both was necessary; the choleraic patient furnished the germ, and the soil provided certain emanations, which, entering into combination with each other, whether in the atmosphere or in the human organization itself, resulted in choleraic infection.

Dr. Mühlig believed that the Report was erroneous in attributing to Pettenkofer the opinion that the peculiar soil described by him would act only as the receptacle *in which* the choleraic germ would have to undergo a sort of fermentation. Now, the peculiarity of Pettenkofer's views was not manifested in that at all.

Count de Lallemand and Dr. Pelikan concurred in Dr. Mühlig's remarks.

So did Dr. Salem Bey, who had been a pupil of Pettenkofer's and Dr. Lenz. The latter gentleman stated, however, that he agreed with the Report which gave the substance of Pettenkofer's theory, though it did not exactly reproduce it.

Dr. Polak read an article published by Pettenkofer in the *Journal de Biologie* of 1865, (page 355) regarding the conditions necessary to the development of cholera. These conditions were: 1*st*, a stratum of earth inhabited by men, penetrable to a certain depth by water and air (the depth of the subterranean water); 2*nd*, a more considerable fluctuation temporarily in the degree of humidity of this stratum, which fluctuation showed itself in the simplest and surest manner by the difference in the level of the subterranean waters. The most dangerous moment was when this level sank after having attained a considerable height; 3*rd*, the presence of organic, and chiefly excrementitious matters, spreading themselves in a susceptible soil; 4*th*, the specific germ spread by human communication (the specific cause of cholera), and the principal vehicle of which was formed by the evacuations from the alimentary canal; it was possible, however, that evacuations of men who were healthy, but who came from infected places, produced the same result; 5*th*, an individual disposition towards cholera. Pettenkofer added that the propagating agent might be considered as a cellule or as an organic ferment, and that two hypotheses may be suggested to explain the connection existing between human communication and the soil:

1*st hypothesis.*—*It may be supposed to be possible and probable that the infecting germ contained in choleraic excrementitious matter requires a certain sort of soil for its development, propagation, and multiplication.* According to this hypothesis, the active choleraic germ would stand in need of a certain sort of work (of fermentation, said Dr. Polak) in the soil, in order to reach us and exercise its action.

2*nd hypothesis.*—*The injurious agent which proceeds from the soil and the agent proceeding from importation, combine with each other in the organization itself, and the choleraic condition originates from this combination.*

Dr. Polak observed that Pettenkofer, who at first leant towards the first theory, was now rather inclined to trust to the second.

Dr. Maccas was in favor of the Report, although he admitted that it did not perhaps reproduce, with all the precision and breadth that were necessary, Pettenkofer's theory; it was necessary to avoid as much as possible entering upon theories.

Drs. Goodeve and Bykow were of opinion that there was nothing in the text of Chapter XXVI contrary to Pettenkofer's theory; the Report, without pretending to reproduce it exactly, admitted, as he did, the necessity for the presence of the choleraic principle for the development of a choleraic epidemic: it supposed only that this principle, which was in the soil, where it could not develop itself spontaneously, ought to penetrate the soil, with choleraic *dejecta*.

Dr. Fauvel replied that it was not the duty of the Committee to develop Pettenkofer's theories, who only treated the question in the point of view of the soil, while the Report had to consider *the influence of hygienic conditions*. Moreover, there was no contradiction between what was said in the Report and Pettenkofer's theory. That savant, it was true, did not believe that the penetration of choleraic matter into the soil was indispensable in order that the exhalations from that soil should favor the development of cholera; but this was a very subtle theory into which it was clearly impossible to follow him. The report might be completed by the thorough discussion of the question, but the text ought not to be modified.

Dr. Monlau would vote for the conclusions of the Committee. He thought, however, that it would be well to give a somewhat fuller explanation of the predilection of pestilential diseases, and of cholera especially, for the poorer classes. In his opinion this predilection would be considerably lessened if correct statistics could be furnished showing the exact comparative number of persons of the laboring classes living in infected localities, and that of individuals belonging to the well-to-do classes who emigrate. It was also necessary to take into account the chances of transmission, which were much more numerous for the poor than for the rich; one of the latter could isolate and take care of himself and make use of preservatives, while the poor man, on the other hand, lived in the very contrary conditions. In support of this, Dr. Monlau pointed out that when the poor could be kept in more or less complete isolation, as was the case in hospitals, prisons, convict-depôts, &c., they very often remained untouched, or, at any rate, the number of attacks among them did not exceed the ordinary proportion of attacks among the rich. The providential law of epidemics, which required that the number of victims should not be unlimited, applied to the poor as well as the rich. Dr. Monlau added that he would not even be surprised if the figures were to show, due proportions being kept and there being an equality in the chances of transmission, that the conditions of receptivity and consequently the attacks of cholera, were about equally shared. The facts which showed that *misery* had been spared, even under the most deplorable conditions, were rather numerous. Amongst those mentioned by the Committee, there was one which deserved attention, *viz.*, that of the seven hundred galley-slaves in the bagne of Constantinople. As the report very rightly said, every thing had not yet been said upon the auxiliary causes of cholera. The question, moreover, it should be understood, was only as to the real influence of *misery* on the number of attacks of cholera, and not at all as to the issue of the attacks: every-

thing combined to render the mortality among the poor greater than among the rich.

Repeating an observation he had already made in Committee, Dr. Monlau added that he would have wished, on the other hand, that mention had been made of the influence of the moral condition of the localities attacked, *i. e.*, the influence of the passions, and especially of fear. Fear and courage were evidently not the same thing, as was said by the ancients (*Timor et coragium sunt unum idemque,*) but cholera inspired fear, and fear powerfully contributed to its development. Dr. Monlau brought forward many facts to prove it.

Dr. Fauvel remarked that the Report only spoke of misery in the point of view of the consequences it entailed, filth, over-crowding, bad food, &c.; with equal numbers, it was distinctly established that the poor suffered more than the rich.

Dr. Mühlig concurred in these views.

Dr. Pelikan did not believe so strongly as Dr. Monlau in the influence of fear as an auxiliary cause of cholera; it had frequently been seen, and notably at Constantinople during the late epidemic, that cholera raged in lunatic asylums.

Dr. Maccas disputed the assertion made by the report that Dr. Pellarin was the first who had laid down the proposition that the alvine excretions of choleraic patients contained the propagating principle of the disease. Other physicians had expressed the same opinion before him. It was necessary specially to mention Professor Gietl, of Munich, who, as far back as 1831, pointed out, in the reports addressed to his Government, the great importance of choleraic dejecta in an etiological as well as in a prophylactic point of view. The same Professor Gietl, in a work published in 1832, entitled *Observations on epidemic and sporadic cholera*, said that the choleraic poison, or the contagious principle of cholera, was contained in the dejections; that the dejections were the means, *par excellence*, of propagating the disease, since it was from these dejections that the contagious principle emanated. M. Gietl also believed in the possibility of the importation of cholera by persons suffering from diarrhœa, and by things soiled by matter proceeding from dejections. In support of what he advanced, Dr. Maccas quoted an Ordonnance of the Bavarian Government, dated the 22nd October 1836, prescribing the application of the theory of M. Gietl, *viz.*, "that the excrements of cholera patients should always and immediately be subjected to neutralization," &c. Francois de Gietl's *Cholera, according to observations made in the Munich Hospital* (1865), and the *Report on the choleraic epidemic of* 1854 *in Bavaria*, by Dr. Aloys Martin (Munich, 1857) might also be consulted.

Dr. Lenz believed that the Report had wrongly mentioned Pettenkofer's name alongside that of Dr. Snow, in connexion with the influence that might be exercised by water, under certain circumstances, in the development of cholera. Pettenkofer had renewed at Munich the enquiries made by Dr. Snow in England, but, as he had

himself declared, without attaining any result supporting Dr. Snow's theory.

Dr. Millingen did not approve the order followed in the Report: it should have been explained in the first place what was the generating principle of cholera, and what were its principal receptacles, and then only should the report have passed on to the circumstances favoring the development of choleraic epidemics.

Dr. Fauvel replied that, though the auxiliary causes of cholera might be known, it was not so with the choleraic principle, the nature of which was not known. The report proceeded from the known to the unknown, which was the only road it could follow.

Reverting to the observation previously made by Dr. Monlau, Dr. Goodeve said that it was proved by statistics that in England cholera had not carried off more victims among the poor than among the wealthy: the number of attacks among the former was more considerable, but, proportionately, the mortality was the same.

The Conference then divided: the text of Chapter XXVI was adopted unanimously, with the exception of Dr. Monlau, who refused to vote.

Ayes:—Dr. Polak, Count de Noidans, M. Segovia, Count de Lallemand, Dr. Fauvel, Dr. Goodeve, M. Kalergi, Dr. Maccas, Professor Bosi, Dr. Salvatori, M. Keun, Dr. Millingen, Dr. Mühlig, Dr. Lenz, Dr. Bykow, Dr. Baron Hübsch, His Excellency Salih Effendi, and Dr. Bartoletti (total 18).

The conclusion was adopted unanimously.

The meeting terminated at 5 P. M.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE, }
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 22, OF THE 2ND JULY 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its 22nd meeting at Galata-Serai at noon of the 2nd July 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d' Affaires.

Dr. Monlau, Member of the Superior Spanish Council of Health.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister-Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to his Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, and Assistant-Military Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to his Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, and Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi, one of the Secretaries, read the minutes of the meeting of the 27th June (the twentieth meeting): they were approved. Some explanations were interchanged between MM. Millingen and Fauvel regarding the circumstance of the death of the attendant in the hospital at Therapia of black cholera in consequence of the opening of the corpse of a cholera patient. M. Millingen would wish to see the name, which was mentioned in M. Michel Lévy's work, repeated in the Report; while M. Fauvel, on the other hand, for reasons in which the Conference concurred, would rather omit it. These explanations were followed by others between Drs. Bartoletti and Fauvel on the one hand, and M. Monlau on the other, regarding the lazarettos of the Ottoman Empire. According to M. Monlau, there were very few, if any, of these lazarettos during the late epidemic. As M. Monlau persisted in his assertion, M. Bartoletti insisted that it should be recorded in the minutes that the assertion had been triumphantly refuted by M. Fauvel, who had put in a statement of persons undergoing quarantine in eleven lazarettos—establishments worthy of the name—secluded and isolated.

M. Fauvel confirmed what Dr. Bartoletti said, and added that at Salonica, at the commencement of the epidemic, the persons undergoing quarantine performed it in the lazaretto, properly so-called, which had contained as many as thirteen hundred persons at a time. It being found by the people subsequently not to be large enough, and as excessive overcrowding was apprehended, they required that the persons in the lazaretto should perform their quarantine in tents and huts at a

distance from the town. Of the eleven lazarettos mentioned in the table, continued M. Fauvel, seven were fitted for the shelter of the people performing quarantine.

M. Bartoletti remarked that an exception must be made, however, regarding the lazaretto at Trebizond, which should be mentioned with reserve. This lazaretto having been found to afford insufficient accommodation from the commencement of the epidemic, the quarantine was performed in tents and huts.

M. Monlau replied that all these arguments proved absolutely nothing in regard to the point he had upheld. In the so-called lazaretto of Salonica, where there really was overcrowding, out of the 114 cholera patients who were there from the 1st to the 12th of August, 73 died.

After these explanations, His Excellency the President asked for the opinion of the Honorable Conference as to whether M. de Collongue should also read the minutes of the last meeting.

On the motion of Count de Lallemand, who remarked that if that were done, a great part of the sitting would be occupied in listening to the reading of the minutes, His Excellency adjourned the reading of the last minutes to the next meeting.

The order of the day being the continuation of the discussion of the general report, His Excellency the President invited the reporter to be good enough to continue the reading of it, which had been interrupted at the last meeting at Chapter XXVII.

M. Fauvel read the heading, the text, and the conclusion of Chapter XXVII.

M. Monlau remarked, with reference to the text and conclusions of this Chapter, that it was open to the same objections that he had urged with regard to ships, lazarettos, &c. All the facts given in the Chapter were, he thought, more capable of interpretation in favour of epidemicity than of transmissibility.

In this way, said M. Monlau, people commenced by supposing that, in a locality attacked by cholera, every person in the place was thrown into a choleraic *centre*, that the whole atmosphere was poisoned which, he believed, was anything but proven, and that all the inhabitants, absolutely all, were more or less infected with the choleraic poison, an assertion which was contradicted again by the fact that every body who kept himself isolated remained uninfected.

Every choleraic invasion, continued M. Monlau, commenced with more or less numerous cases, always due to importation, and the links in the connecting chain of which could be followed up with precision, especially in confined localities. Sometimes the entire series of cases in an invasion might be explained by simple transmission, and it was not till towards the end, but not always, in great towns, and on account of the impossibility of tracking out in them all the connecting circumstances of transmission, that it might be supposed a general diffusion

was at work similar to the influences of ordinary choleraic epidemics. In the majority of choleraic invasions, epidemicity performed no part; all the evil was caused by transmission. He believed firmly that in an invasion of cholera, as in every other transmissible disease, whether by inoculation or by touch, or by specific infection at a short distance, the individuals who experienced positive transmission, and who possessed the proper conditions of receptivity, were attacked; and that those who were not in possession of the necessary receptivity, remained uninfected notwithstanding the transmission.

This was all.

It was not exactly known, continued M. Monlau, what were these conditions of individual receptivity, but it appeared that non-receptivity, or *immunity*, as they desired to call it, was far from being always proportionate to the vital resistance, as was said in the report. If the trouble were taken to refer to what had occurred in armies, in hospitals, in the entire mass of men invaded by cholera, a crowd of exceptions would be met with of sufficiently great weight to counterbalance the rule. The report had indeed anticipated these exceptions, but it had simply turned them to its profit by affirming that they were merely confirmatory of its rule of proportionality. If, for instance, one person, anœmic, nervous, a valetudinarian, in an indisputably wretched physiological condition, were respected, and another, a strong, vigorous man, were stricken down, instead of confessing that the resistance to contagion or to specific miasma was not in any way measured by the vital resistance, it was affirmed that attenuation was not attenuation, that vigor was not vigor, and that, in point of fact, athletic and vigorous men were only *badly balanced phenomena.*

Theoretically speaking, continued M. Monlau, it should seem that persons enfeebled by infirmities and wretchedness, incurred a fatal chance of choleraic poisoning: experience, nevertheless, did not always confirm this provision. In armies, in fact, young soldiers, full of strength, were often seen mortally stricken by cholera; and it was stated that at Paris, in 1849, cholera raged very much less in the quarter Saint Louis Popincourt and the faubourg St. Antoine than in the wealthy quarters. Analogous facts, said M. Monlau, were sufficiently numerous, and this was why, at the last meeting, he had allowed himself to invite the attention of the Conference to auxiliary causes. He (M. Monlau) admitted the deplorable influence of these auxiliary causes, and was of opinion that it would be very interesting to determine with some precision its degree and its condition.

True *immunity* in the doctrine of transmissible diseases, consisted, in his opinion, in the *immunity* acquired by the effect of inoculation; or rather it was the result of a previous attack of the disease, for *contagious diseases*, in his opinion, *never attacked a man oftener than once in a life-time.* Individuals recovering from such an attack then acquired something like real *immunity.* But this immunity, continued M. Monlau, which had been converted into a law, had its exceptions,

nevertheless, even in regard to contagious febrile diseases, such as variolla, &c., in which the exemption from any ulterior invasion was more constant. But even admitting, in regard to cholera, the benefits of real *immunity*, and the absolute exemption of those who had recovered from a first attack, it could not be admitted that alongside of this immunity, which was the exclusive property of transmissible diseases, and of which, notwithstanding this circumstance, not a word was said in the report, could be placed the pseudo-immunity of simple epidemics. In ordinary miasmatic foci, *i. e.*, such as were diffused and permanent, it happened that certain persons in certain circumstances, managed to accustom themselves to the state of things, to become acclimatised more or less slowly, but it was not so in the locality of the infectious principle of cholera, which, while he admitted that it had the air of an excipient, only acted in very close proximity to the focus of emission. The fact of having stayed in a place infected with cholera for a week or two without any deterioration in health, in no way implied immunity; the person remaining uninfected was indebted for his good fortune to his having kept himself isolated, or to his *non-receptivity*, or to his receptivity not having been put to the proof. Far from having acquired immunity by a stay of some weeks, a term which was insufficient in a cholera-infected locality, these persons were only too frequently the agents of the importation and propagation of the disease. When cholera broke out, for instance, in a ship the port of departure of which was tainted with cholera, the epidemic always commenced its ravages upon persons supposed to be enjoying immunity. Well, continued M. Monlau, this imaginary immunity, which, even according to the text of the report, was *never a guarantee for the future*, performed a great part, however, in the doctrine submitted for the approval of the Conference: it was this immunity which, in ships and in lazarettos, in pilgrimages and in armies, rapidly weakened the transmissibility of cholera; and it was it, finally, which caused the cessation of all transmissibility among populations by the *immunisation*, so to speak, of all the survivors en masse. The transmissibility, said M. Monlau, was admitted, but it was surrounded by so many obstacles, and so many correctives of it were found, that, in truth, one was tempted to believe that there was no occasion to think seriously of the effects of an invasion of cholera.

The considerations he had just urged with regard to individual immunity, applied, added M. Monlau, to localities which were only collective individualities. He mentioned as an instance the great choleraic invasions of 1855 and 1856, which spread, without exception, to all the provinces of Spain. Out of a total number of twenty thousand communes, there were 5,336 localities attacked; that is to say, three-fourths of the total number escaped altogether, notwithstanding a very probable importation. Why, he would ask, did they remain uninfected? For the same reason, he thought that the town of Lyons, in spite of auxiliary causes, showed itself refractory to the greater part of the importations of cholera: because there is a specific local receptivity in the same way that there is an individual receptivity.

To sum up, said M. Monlau in conclusion, the theory of immunity as put forward and applied in the Report of the Committee, responded to the doctrine of *epidemicity* rather than that of transmissibility, which had been admitted by all the members of the Conference. He expressed the opinion, in conclusion, that it was useless and even dangerous to the profilaxy of cholera, to invoke at every moment *places, influence, fatal evolution, phases, periods, foci,* and all the *technical* apparatus of epidemic etiology. He would refrain, therefore, from joining in the vote upon this conclusion, just as he had refrained in Committee.

M. Pelikan said that though he accepted the conclusion of the Report in substance, he had refrained from voting in Committee because he did not agree that *individual indemnity* could be explained by *vital resistance* and *predisposition to cholera* by *diminution of vital force* or *vitality.* In his opinion it should, at any rate, have been stated what were the predisposing conditions connected with a purely local injury, such, for instance, as catarrhal affections of the alimentary canals, &c.

M. de Lallemand expressed his surprise at the constant antithesis put forward by M. Monlau between epidemicity and transmissibility.

He (M. de Lallemand) confessed that he failed to perceive any such antithesis in the report. Although he was no physician, he could not admit M. Monlau's doctrine regarding vital resistance, nor could he accept the arguments he had made use of in disputing what was explained in the Report. In his (M. de Lallemand's) opinion, the *immunity* mentioned in the Report might be temporary or permanent: this immunity (if he understood the Report aright) would result from the combination of the forces which opposed themselves to the contraction of the disease by an individual, or to his sinking under if it attacked. M. de Lallemand thought that laws should not be looked for where the reporter had only stated facts; the Committee had established *immunity* with regard to cholera on known facts.

M. Polak stated that he accepted the text and conclusion of this Chapter, but he would be glad of the suppression of the entire phrase terminating with the words "these giants are, after all, only badly balanced phenomena."

M. Bykow wanted to make a brief observation on the following sentence "*but cholera does not go higher,*" *i. e.*, than 6,000 feet above the level of the sea. This sentence, in his opinion, was expressed in such a way as to allow it to be supposed that it was the opinion of the Conference. He wished that the words "*in Persia*" might be added to it to give it its correct value, for it was known that cholera could go higher, and that, in 1846 for instance, it had, in order to pass from Tiflis to Stavropol, traversed the Caucasian chain at a point 7,000 feet above the level of the sea.

M. Stenersen pointed out that in the text of Chapter XXVII, the Committee had developed the doctrine that *immunity* against cholera

was *proportionate to the vital resistance of individuals*, and that it was variable like the latter, that is to say, it was proportionate to vital resistance in general; to the vigor with which the internal forces of an individual combined to resist death under whatever form it presented itself. That was an important doctrine, and one which deserved, if it were correct, to be clearly enunciated in the conclusion. But this was not done, and in the conclusion the Committee said, "*immunity*, which attested the individual resistance to the poisoning principle," which was a tautology explaining nothing, in his opinion. It was just exactly, he thought, as if one were to say that the immunity of individuals against cholera attested the immunity of individuals against cholera. The Committee had said precisely the same thing in different words. On the other hand, continued M. Stenersen, the Committee had added that it was important to take this individual immunity seriously into account. It was altogether useless to say that, in his opinion, for the fact of the majority of the inhabitants of a place where cholera was raging resisting the disease was too important to admit of its being forgotten. Therefore, with the object of eliminating a useless phrase from the conclusion on the one hand, and of establishing in it, on the other, the scientific doctrine enunciated in the text, regarding individual immunity, he proposed the following modification in the 2nd and 3rd part of the conclusion :—

" Similarly the more or less complete and more or less durable " immunity enjoyed by the greater number of persons placed in the " choleraic focus, an immunity proportionate to the vital resistance of " individuals, is, in an epidemic point of view, a corrective to the trans- " missibility, and in a prophylactic aspect, it supplies means adapted to " restrict the ravages of the disease."

M. Mühlig addressed some observations to M. Monlau on the subject of his opposition to a truth admitted by all medical men. It was a constant fact, he said, that a town which had been visited by an epidemic, afterwards enjoyed a species of immunity against that epidemic. This was so true that in Germany there was a vulgar expression to designate this acquired immunity : a town or locality was said to be *épidémisée*, or *cholérisé*. M. Mühlig was persuaded that M. Monlau was not ignorant of this fact. As for vital resistance, it was explained by the fact that an epidemic raged much more seriously among the poorer classes, and inflicted greater sufferings on them, though those classes comprised robust people, than the well-to-do classes. Those who were in easy circumstances guaranteed themselves better against the disease : that was how vital resistance should be understood. M. Mühlig concluded by saying that the report was right.

M. Monlau replied that he did not dispute the fact; he admitted it; he only attacked the interpretation given to it. If a town which had suffered from the epidemic enjoyed a sort of immunity, it was because all those who had been predisposed to contract the disease had died. On whom then could the disease exercise itself? He also admitted the influence of poverty, with this difference that he would be

glad if the degree of this influence were determined by precise statistics comprising all the facts in detail. Possessing such statistics, added M. Monlau, there was no doubt that it would be shown that the rich were ordinarily not so well treated by the disease as was fancied; while at the same time poverty, with its disastrous consequences, so advantageous to the epidemic, did not always find itself in the deplorable conditions attributed to it. This exaggeration of the deplorable influence of misery was to be found in the report.

M. Bosi was of opinion that M. Monlau unjustly criticised the Committee in saying that it accorded too much importance to the *epidemicity* and too little to the transmissibility of cholera. This transmissibility having been previously admitted by the entire Committee, and by the Conference itself, it only remained for the Committee to state in the Report what were its correctives, those which history proved to be most efficacious, and, on these correctives, the Committee had founded the doctrine of immunity (of individuals, localities, &c.). It was not by the Committee, to tell the truth, that this doctrine had been propounded, thanks to which practical and efficacious measures might be successfully established: the Committee had merely adhered to Pettenkofer's theory.

Now, continued M. Bosi, as regarded that vital resistance spoken of in books under other denominations, such as, for instance, *want of disposition to contract such and such a disease; individuals who are not predisposed, &c., &c.*, what did it consist of? It must be confessed that nothing positive was known regarding it, but the fact remained for all that.

M. Monlau persisted in believing that the word immunity was an ill-chosen and improper expression, and that it should be replaced by the word *non-receptivity*. Of real immunity, he said, there was no question at all in the report in which immunity and epidemicity were confounded and treated of without any logical order.

"If all the Delegates," said M. Fauvel, "had attended the meetings of the Committee, and had followed the discussion of the report, it would be superfluous to-day to reply to M. Monlau, who has said in Committee all he has said here, and whose objections were refuted by me and others."

M. Monlau proceeds in a scientific manner, which is not ours. In a word, he is dogmatic: he takes what he believes to be an incontestable truth, and starting from that, he deduces his theory. Every argument which does not support his doctrine, he stigmatizes as bad; every fact in opposition to it is rejected as doubtful or inexact. People reasoned in this way in the middle ages, when the scholiasts flourished. It appears that M. Monlau wishes to take us back to those times. Unfortunately for us, not agreeing in his mode of philosophizing, we cannot subscribe to his reasoning. We belong to the modern school of science, which proceeds from facts in deducing its laws,—not, let it be distinctly understood, immutable and permanent laws,—but laws in

harmony with known facts. M. Monlau's method, therefore, is not ours. According to his ideas, when we speak of immunity we establish a dogma, and it is in vain we tell him that to us it is a simple *à posteriori* deduction: he refuses to allow it. We say "such and such persons have enjoyed immunity because they have not been attacked"; and thereupon M. Monlau enters upon a verbal discussion with us, the result of which is that he does not understand us, and that we can scarcely understand what he means to uphold. Moreover, according to M. Monlau all this ought to be stated and demonstrated by statistics. Well, we reply that the statistics he calls for are in existence, and we ask why does M. Monlau pretend to be ignorant of their existence? We are afraid that if we put them forward, he would not admit them. M. Monlau mentions the instance of Paris, where, in the epidemic of 1849, the rich, according to him, suffered more severely than the poor. He deceives himself: statistics prove the very contrary. But M. Monlau, who calls for the evidence of statistics, neglects to consult them.

"To believe M. Monlau we make a theory of immunity. No, I say again, we have never thought of doing so. Moreover, it is not correct to say that the Committee did not take up the question of immunity respecting individuals who have experienced the influence of the disease, which, according to M. Monlau, constitutes true immunity. This immunity is entered into in the Report."

After these observations, M. Fauvel proceeded to refute the objections urged by other Delegates. In the Report itself, he said, would be found the reply to the objections made by M. Pelikan. He had wrongly reproached the Committee with having omitted to mention the predisposing conditions which neutralised the effects of vital resistance, for they were very clearly shown in several passages in the Report.

To M. Stenersen, who disputed the conclusion of Chapter XXVII., M. Fauvel replied that, in admitting that immunity was proportionate to the vital resistance, the report had not meant to give an explanation, but to state a fact. And as regarded the conclusion, in which M. Stenersen desired the suppression of a portion of a sentence, he (M. Stenersen) had not perceived that what he wanted to be suppressed was the necessary complement of what had gone before, and that it called attention to what followed.

Dogmas, replied M. Monlau, were the consequence of facts, and modern science in that respect was based upon the same laws as were established by Aristotle, and in a later age by Bacon. Laws could not but be immutable, and, consequently, all M. Fauvel's scientific scaffolding rested on such very treacherous and unsafe ground, that true philosophy, ancient or modern, did not find it difficult to make it crumble away. He (M. Monlau) therefore did not mean to follow M. Fauvel in his philosophic doctrines. But he could not allow his assertions regarding statistics to pass unanswered. He (M. Monlau) declared that he was quite *au courant* of statistics, that he did not purposely neglect

them, as had been attempted to be made out, and that still less was he ignorant of them. But he was not contented with all statistics; he required that such statistics as were relied upon should be precise and drawn up in a philosophical manner. Then only would they possess the necessary value.

He had not had any intention of denying the influence of poverty: he admitted that it was a powerful auxiliary of an epidemic, and M. Fauvel had wrongly made him say the contrary. But this deplorable and grievous influence, he said, ought to be properly determined by complete and irrefragable statistics. As for the Paris epidemic of 1849, he had extracted the fact he had mentioned, *viz.*, that the wealthy classes suffered more severely than the poor, from works on the epidemic.

M. Stenersen remarked to M. Fauvel that he had perfectly understood the conclusion, and it was because he had so entirely understood it that he had asked for the suppression of a useless member of a sentence. He persisted in believing that it was superfluous to say that it was necessary to reckon individual immunity as a most important circumstance. He had not failed to give the reasons which had induced him to ask for this suppression, and for the modification of the two parts of the conclusion.

M. Sawas, taking up the point maintained by M. Monlau, expressed himself in very nearly these words:

"The transmissibility of cholera is not M. Monlau's dogma, as was tried to be made out. It is a truth admitted by the Conference, proclaimed by all its members, and for which M. Monlau is no more responsible than any other member of the Conference.

"M. Fauvel maintains that it is the doctrine of the middle ages that M. Monlau professes: by which he means to say that he reasons *à priori*. If that is so, M. Monlau does not argue differently from M. Fauvel himself, when the latter endeavours to explain a fact admitted by all to be *epidemic*, while M. Monlau explains it by *transmission*.

"Both of them admit the same fact—a fact, moreover, which is admitted by all the members of the Conference, *viz.*, that persons who have remained for some time in a choleraic focus are less apt to contract the disease than those who have not been subjected to the influence of the neighbourhood of persons suffering from cholera. But agreeing upon this point, they differ in respect of the manner of explaining the fact. I believe that if the Conference sanctions the interpretation of it given by M. Fauvel—which I should be sorry to see it do—it will contradict itself, for it has admitted the transmissibility of cholera as an incontestible fact, and on this fact the entire doctrine of M. Monlau is based. His interpretation, therefore, is in conformity with the views of the Conference, and it should be preferred even if it be not the most correct: and all the more so because this theory presents no difficulty in a practical point of view. But not so with M. Fauvel's interpretation. Lately at the meeting of the second Committee on the 3rd

group, it was found necessary to stop and reflect seriously on the immunity acquired by the crew of a vessel on board which a serious choleraic epidemic had prevailed."

M. Sawas was of opinion that the Conference ought to confine itself to stating the fact of immunity without attempting to explain it, which it could not do by hypotheses which were more or less hazarded and hurtful in practice.

After this, said M. Sawas, came the question of vital resistance. He was of opinion that in order to understand this expression, it was not enough to go back only to the middle ages, but it was necessary also to go back to the fabulous period of medicine. When *vital resistance* was mentioned, why not also mention *vital strength, innate fire,* and other analogous expressions ? These were so many pieces of money which were no longer current, and which had been withdrawn from circulation by the adepts of modern science. The expression *vital resistance* was moreover inadmissible in a report like that of the Committee, because it might give rise to interpretations of the nature of that of M. Stenersen, who, with a good deal of reason, had asked whether this word was meant to designate a special quality inherent to man, or that occult strength which battled against disease. It was the *quid divinum* of the ancients, said M. Sawas,—incomprehensible, especially by those who were not physicians. But let those who were physicians endeavour to understand the expression, and see whether this resistance could help them in any way. He maintained it did not, for it wanted weight. In fact, how was it possible to estimate its value, in order to appreciate this antagonism of transmissibility ? It had been pretended, added M. Sawas, that cholera preferentially raged amongst the poorer classes, because the vital resistance of those classes was very low. M. Monlau, he believed, was not wrong in giving his opinion contrary to this assertion, and he (M. Sawas) concurred in his opinion, for he also thought that it would be erroneous to suppose that an effeminate fop could oppose greater vital resistance to cholera than a robust laborer.

M. Sawas concluded that science was not yet in a condition to explain such facts. Let them, therefore, refrain from the attempt; it was much better to acknowledge one's ignorance of certain questions than to lead to error by an excess of presumption. For this reason he wished for the suppression of all forced explanations in the chapter under discussion.

M. Fauvel begged the Secretary to note that M. Sawas had attributed arguments to the Committee it had never made use of.

Taking the opinion of several Delegates, His Excellency the President put the text of Chapter XXVII to the vote.

It was adopted by a majority of 22 to one, and two abstentions, *viz.*, MM. Monlau and Stenersen.

Ayes :—MM. Polak, de Noidans, Segovia, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Maccas, Bosi, Vernoni, Keun,

Millingen, Gomez, Testa, Mühlig, Lenz, Bykow, Hübsch, Salem Bey, and His Excellency Salih Effendi (22).

No:—M. Sawas.

His Excellency the President then put the conclusion of Chapter XXVII to the vote. It was adopted by a majority of 21 to 1, and 3 abstentions.

Ayes:—All those just mentioned, with the exception of M. Maccas, who refrained from voting.

No:—M. Sawas.

Declined to vote:—MM. Monlau, Maccas, Stenersen.

M. Fauvel read the text and conclusion of Chapter XXVIII.

The text and conclusion were put to the vote and adopted by a majority of 25 against one abstention, *viz.*, Dr. Goodeve.

Ayes:—MM. Vetsera, Polak, de Noidans, Segovia, Monlau, Spadaro, de Lallemand, Fauvel, Dickson, Kalergi, Maccas, Bosi, Vernoni, Keun, Millingen, Sawas, Gomez, Testa, Mühlig, Lenz, Bykow, Hübsch, Stenersen, Bartoletti, and His Excellency Salih Effendi.

M. Fauvel read the text of Chapter XXIX. He remarked that the conclusion of this chapter came in further on.

M. Bykow said he wished to mention a fact which supported the conclusion of this chapter, and which proved that the choleraic atmosphere which surrounded a sufficiently intense focus of infection, did not spread further than 85 mètres. This fact, he said, was proved in connection with the history of the cholera epidemic which prevailed at Orenburg in 1829. Whilst a violent epidemic was raging in one of the Tartar villages of the province of Orenburg, named Karamala, (where, from the 10th to the 20th of December, out of a population of 145 persons 41 were attacked and 20 died), another village inhabited by Russian peasants and 85 mètres distant from the former, on the first intimation of the appearance of cholera at Karamala, isolated itself completely, interrupting all communication with that village. This timely measure preserved the Russian village from invasion by the disease, which, he thought, would not have been the case if it were possible for the choleraic principle to transport itself through the atmosphere to the distance of 85 mètres.

The circumstance, said M. Bykow, was authentic, and was recorded in the report of the Military Governor of Orenburg on the progress of the epidemic in that town in 1829 and 1830.

M. Fauvel read the title and conclusion of Chapter XXX.

Dr. Goodeve entered a reservation with respect to that part of the conclusion which mentioned the distance to which cholera was transmitted through the atmosphere. He would rather not have it distinctly laid down, as had been done, that this distance was, in the immense majority of cases, very close to the focus of emission.

His Excellency the President put Chapters XXIX. and XXX., text and conclusion, to the vote.

They were adopted by a majority of 24 against one abstention, *viz.*, M. Sawas, Dr. Goodeve voting under reserve.

Ayes:—MM. Vetsera, Polak, de Noidans, de Segovia, Monlau, Spadaro, de Lallemand, Fauvel, Dickson, Kalergi, Maccas, Bosi, Vernoni, Keun, Millingen, Gomez, Testa, Mühlig, Lenz, Bykow, Hübsch, Stenersen, Bartoletti, and His Excellency Salih Effendi.

M. Fauvel read the text and conclusion of Chapter XXXI.

M. Monlau said that he agreed to the conclusion, with one small exception. He believed that it would be well to say that if nothing demonstrated the penetration of the choleraic poison through the skin, neither did anything demonstrate the innocuity of organic particles proceeding either from the skin or from the respiratory apparatus of a cholera patient.

Chapter XXXI and its conclusion were adopted unanimously.

Ayes:—All the above-mentioned, with the addition of Dr. Goodeve and M. Sawas.

M. Fauvel read the text and conclusion of Chapter XXXII.

M. Monlau remarked that though it had been asserted that the matter of the dejections of cholera patients constituted the principal medium of the transmission of the disease, it would at any rate be prudent to make it understood that if choleraic dejections were the chief receptacle, they were not the only receptacles of the morbific agent, and it was also necessary to make it understood that a person suffering from cholera exhaled from the entire surface of his body, in the same way that he discharged upon all his surfaces of excretion, emanations capable of containing the re-producing germ of the disease.

His Excellency the President put the text and conclusion of Chapter XXXII to the vote.

They were adopted unanimously.

Ayes:—All the above-mentioned, with the addition of M. Monlau. Dr. Salem Bey voted for Dr. Bartoletti.

M. Fauvel read the title and conclusions of Chapter XXXIII.

M. Bykow mentioned two facts which proved—though they were wanting in detail and in precision—that the choleraic principle might maintain itself latent for a long time. These two facts, he said, had been observed in Russia during the epidemic of 1830-31, and were mentioned in a treatise written by the members of the Committee appointed *ad hoc*, and published at St. Petersburg by the medical department of the ministry of the interior (1831).

With regard to the first case, it was said that the choleraic principle had maintained itself in a latent condition for more than a month in some sheepskins shut up in a box (para. 76).

The second fact related to a soldier who died immediately after having entered upon possession of a cottage the owners of which had died of cholera a month before, and which, after having been emptied of every thing it contained, remained uninhabited until the soldier took possession (para. 78).

M. Mühlig said that he considered the second conclusion of the 31st Chapter not only as hazardous, but also as dangerous. He would vote against it, as he had done in Committee, for the reasons he was about to set forth, and which he deemed it specially necessary to submit to those of the delegates who, not having been present at the meetings of the Committee, stood in need of certain details in order to correctly appreciate all the bearings of the question.

During every choleraic epidemic, said M. Mühlig, a very great number of persons died from diarrhœa. Now it was known at the present day that these diarrhœas, which resulted from the same epidemic influence as cases of confirmed cholera, were in point of fact only cases of slight cholera, miniature forms of the disease itself. To these cases the name of *choleraic diarrhœa* had been applied—*cholera diarrhœ*, amongst the Germans—the name of premonitory diarrhœa, *vorboten diarrhœ*, being applied rather to cases where this diarrhœa was followed by an attack of confirmed cholera. But as a person suffering from very mild small-pox could transmit the same disease in its most aggravated form to others, so could a person suffering from simple choleraic diarrhœa communicate confirmed cholera to others. If it were added to this that, for a very simple reason, the propagation of cholera to a distance was effected precisely by means of individuals affected with choleraic diarrhœa moving about and travelling, and not by real cholera patients, it would be understood what an important part was acted by choleraic diarrhœa looked at in a practical prophylactic point of view. If they were to consider now, continued M. Mühlig, that choleraic diarrhœa presented no pathognomonic characteristics, sufficient to admit of a distinction between it and simple diarrhœa, it could easily be conceived that every individual coming from a choleraic focus and affected with diarrhœa, ought to be considered as in the highest degree suspicious, it would also be understood how important it was to fix the period of time during which a person should be regarded as dangerous, in other words, what could be the possible duration of choleraic diarrhœa. M. Mühlig now proceeded to show what experience had taught with regard to this matter. Every physician who had seen a great number of sick during a choleraic epidemic, had been able to make the observation that attacks of confirmed cholera were preceded, only by a few days most frequently, by what was called premonitory diarrhœa, sometimes even only by a few hours. On this head M. Mühlig concurred with the majority. Physicians would state at the same time that the more serious the attack, the briefer was the duration of the premonitory diarrhœa: in cases of black cholera (*choléra foudroyant*), for instance, it lasted for only a few hours; on the other hand, the longer the diarrhœa, the less was a serious attack to be dreaded. During epidemics these cases of diarrhœa

were observed, which disappeared only to transform themselves, after a few days into confirmed cholera, and others no less numerous and arising from the same cause, which, with remarkable tenacity, were prolonged beyond eight and sometimes beyond fifteen days.

The majority of the Committee had felt no embarrassment with regard to cases of this latter class. They said that every case of diarrhœa lasting for more than eight days (the term fixed by them for choleraic or premonitory diarrhœas,) without confirmed cholera supervening, ought to be considered as a case of bilious diarrhœa. But he had objected that those diarrhœas which had developed themselves under the same epidemic influence which had engendered legitimate premonitory diarrhœas of short duration according to the ideas of the Committee, were of the same nature as these latter, which lasted longer and which ought all, without exception, to be regarded as suspicious, not saying, however, for all that, there could not be simple non-choleraic diarrhœas. This admitted, the longer their duration, the greater was their tenacity, and the more were they to be dreaded. To his thinking, experience had demonstrated that diarrhœas of brief duration and yielding easily to the treatment applied, were often simple non-specific diarrhœas. To this, added M. Mühlig, the majority of the Committee replied that granting that choleraic diarrhœa might last longer than eight days, it could not do so unless the person attacked still remained in the focus of infection, but that it would soon cease if the person left the place. And it was particular in adding that all the diarrhœas that prevailed in times of cholera were not choleraic diarrhœas. Here again, remarked M. Mühlig, was a dogmatic sentence, a more or less probable hypothesis based upon no fact; on the contrary, the closely observed fact noted by himself as well as by men who were authorities, such as Griesinger and others, was that choleraic diarrhœas were distinguished by their tenacity, and frequently lasted for more than eight days. According to M. Mühlig, the hypothesis touching those diarrhœas which ceased to be suspicious directly the individual suffering was removed from the influence of the choleraic focus, was quite gratuitous, and was contradicted by the fact of acquired immunity, which fact had been admitted by the Committee, an immunity which, with some exceptions, followed after a first poisoning.

In support of his view, M. Mühlig mentioned some rather numerous facts, from which it appeared that cholera had not shown itself in persons coming from a choleraic focus until two weeks, and sometimes longer, after they had quitted the contaminated locality. Thus, he said, to mention only one instance, taken from the late epidemic: cholera did not break out on board the *Renown* until the thirteenth day after her departure from Gibraltar with troops. It was true, added M. Mühlig, that several of these facts were susceptible of different interpretations, but at the same time they demonstrated the possibility of a longer duration of the premonitory diarrhœa.

On the whole, said M. Mühlig, it might be laid down that in cases of choleraic poisoning the attack of confirmed cholera supervened in general after a specific diarrhœa of a few days' duration at most; but if the

attack did not supervene at the end of that time, the diarrhœa might still continue, without, however, losing its specific character.

M. Mühlig proposed, in consequence, to frame the conclusion in the following manner:

"Observation shows that the duration of choleraic diarrhœa, which "cannot always be distinguished from the non-choleraic diarrhœas which "may make their appearance in times of cholera, does not in general "exceed a few days, usually eight or ten. Cases occur, however, where "choleraic diarrhœas are more tenacious, though observation has not yet "demonstrated that they would be otherwise if the persons affected were "to quit the choleraic focus."

M. Gomez was of opinion that the choleraic diarrhœa which it was possible, under the name of premonitory diarrhœa, to confound with that which formed the first stage of serious cholera, most frequently did not exceed a few days in duration. He believed, however, that there were well authenticated facts which proved that this diarrhœa might last for more than eight days, retaining all its infectious nature and its capability to transmit the disease.

With regard to the second conclusion of this chapter, M. Bykow said that, without meaning to enter into theoretical speculations upon the differential diagnosis of choleraic diarrhœa, he would confine himself to giving some statistical data which supported the second part of the conclusion.

During the epidemic in Paris in 1853-54, out of 4,740 patients who had come from outside the city, 4,539 confessed that they had had diarrhœa before admission into hospital. Of these latter, 2,491 had suffered from diarrhœa as follows:—523 for one day; 1,635 between three and seven days; 233 for ten days. (*Vide* Boudin's *Géographie Medicale*).

Moreover, added M. Bykow, in 1832, M. Michel Lévy made an attentive observation of 142 subjects in the hospital of the Val de Grâce. The premonitory diarrhœa had lasted from two to four days in 95; in 31 others the premonitory symptoms had assumed various forms, but always corresponding to digestive and nervous disorders.

The report of the General Board of Health of London, continued M. Bykow, published in 1850, said on this point that, on one occasion, minute researches were made into the first symptoms of 500 cases of cholera, and it was found that almost all of them had been preceded by diarrhœa, which had lasted from ten to twelve days.

It followed then that in 3,086 cases the premonitory diarrhœa lasted only from one day to ten days, and, at the outside, for twelve. No other conclusion but that of the report could be drawn from these facts.

M. Millingen, after recommending that facts should not be made use of to uphold settled prejudices, but that they should be interpreted according to the lights of experience, expressed himself to the same

effect as M. Mühlig, whose doctrine he said he accepted, and in support of which he brought forward fresh instances extracted from the work of M. Lévy, and that of Graves on Clinical Medicine. The latter quoted a letter addressed by the surgeon of the English ship *Brutus* to the Liverpool Board of Health. In this letter the surgeon informed the President of the Board of the details of the appearance of cholera among the passengers eight-days after the departure of the *Brutus* from the Mersey. From the declaration which accompanied the letter, it appeared that from the 27th May, on which date the first case occurred, till the 13th June, when the ship returned to Liverpool, 117 cases occurred, 81 of which terminated in death, and 20 recovered.

M. Millingen extracted the following fact from M. Michel Lévy's work:

Of 744 cholera patients treated in 1854 in the hospital tent near Varna, 170 had had premonitory diarrhœa for fifteen days before it transformed itself into cholera.

In the same way, said M. Millingen, on board the *Virginia* in 1866, which left Liverpool on the 4th April, and arrived at New-York on the 17th, cholera broke out eight days after her departure from Liverpool, in which place no case of cholera had been reported. The first patient succumbed in a few hours after having been attacked by diarrhœa. During the voyage about two hundred persons were attacked, thirty-seven of whom died; many had presented the premonitory symptoms.

The steamer *England*, continued M. Millingen, which went from Liverpool to New-York, touching at Halifax, also had cholera on board, according to Mr. Bissell, eight days after having left the port of Liverpool. During the passage several persons died, and 150 deaths occurred while the vessel was at Halifax.

The same thing occurred on board two other vessels, the *Helvetia* and the *Atalanta*.

Dr. Pelikan remarked that as he had not been present at the meeting of the Committee when this chapter was adopted, he had not been in a position to speak upon the question, but now, having heard and appreciated the argument of M. Mühlig, he declared his entire concurrence with the chapter in question.

M. Salem Bey said he accepted the conclusion of the Committee, because it was in conformity with the teachings of experience. Observation had demonstrated that in the majority of cases choleraic diarrhœa did not exceed a few days in duration; the contrary, he pointed out, was contradicted by experience. The cases of diarrhœa which had been mentioned as having lasted long, preserving their infectious character, were, he thought, exceptional in the first place, and then they might be variously interpreted. That was to say, that a patient suffering from bilious diarrhœa was apt, more than any one else, to contract cholera. It would be opposed to truth to attempt to explain this fact otherwise.

M. Bosi said he concurred in the conclusion of the Committee because the premonitory diarrhœa, that which preceded cholera, *i. e.*, choleraic diarrhœa, did not exceed three and at most eight days in duration. This truth, he thought, was demonstrated in the most formal manner by well authenticated cases during the epidemic. It might happen indeed, he added, that simple diarrhœas which lasted for more than a week might be followed by cholera even if the individuals attacked had been isolated from every cause of contamination; but these facts were not, in his opinion, so conclusive as was thought, they still allowed the doubt to remain that these cases were different from cholera, and that the latter must have supervened later.

M. Maccas would wish that, in the first part of the conclusion, which he accepted, the number of days beyond which premonitory diarrhœa does not last, was given. He stated at the same time that he did not agree with the second part of the conclusion.

MM. Fauvel and Bosi remarked to M. Maccas that the number of days being fixed in this chapter, it would be superfluous to mention them again in the conclusion.

M. Fauvel then proceeded to refute briefly the principal objection urged against the chapter under discussion.

He commenced by reminding the Conference that the second part of the conclusion, which was opposed, was in no wise affirmative: it only expressed a doubt. This conclusion, it had been said, would be dangerous, but he would ask how could a dubious conclusion be dangerous, unless indeed it were changed or distorted. In this chapter it was said that nothing proved that the cases which were mainly depended upon were not cases foreign to cholera, &c. It was thought that this conclusion should be more categorical, and it was proposed to substitute for a doubt something which was a mere guess, scarcely reposing upon properly authenticated facts. It was forgotten that the elements necessary for a categorical decision were wanting.

This point, he remarked, was a most important one in practice, for it might happen that an individual suffering from diarrhœa would not risk remaining for an indefinite time either in a hospital or in a lazaretto. M. Fauvel said he had very attentively followed M. Mühlig's arguments, but he confessed they did not satisfy him. During an epidemic there were some very obstinate cases of diarrhœa, and because they lasted for some time, it was desired to consider them as premonitory symptoms of cholera. In support of this opinion, Pettenkofer and Griesinger were quoted. M. Fauvel was aware of but one case favorable to this doctrine, and that was the case reported by Pettenkofer, a very doubtful case. But were there any means of specifying the difference between simple and choleraic diarrhœa? Was length of time to be depended upon? Surely not, for the person of whom Pettenkofer had spoken had possibly contracted the germ of cholera in prison. Taking statistics—those, for instance, furnished by M. Bykow, only one fact was found in favor of the doctrine which was upheld; thus, out

of 3,086 cases of cholera, the term of twelve days had never been exceeded, and in the immense majority of cases, the diarrhœa had not lasted for more than two, four, and five days. It was experience, statistics, that spoke, and they triumphantly refuted the doctrine which it had been attempted to set up against the conclusion. Observation demonstrated that premonitory diarrhœa did not last longer, but there were exceptions, rare it was true, which showed that diarrhœa sometimes lasted longer. An attempt was made to cause the diarrhœas to pass for choleraic diarrhœas, but on what authority did such a doctrine rest? On one single fact, that reported by Pettenkofer. But would it be prudent to act upon this fact, which was doubtful? And would it not be better, much better, to express oneself in doubt, to point out that there was a want of conclusive instances, of decisive facts?

M. Mühlig replied to M. Fauvel. Much mention was always made of cases as being exceptional in everybody's opinion, but by many people these cases were considered as very ordinary. There were numerous cases of tenacious diarrhœas which were real choleraic diarrhœas, though they never changed into confirmed cholera. No doubt the diarrhœa by which cholera was preceded did not exceed a few days in duration; in the most serious cases it lasted for but a short time, even a few hours; and if the diarrhœa was prolonged, the attack would not be serious—on the contrary those diarrhœas which did not change into confirmed cholera were frequently of prolonged duration. In fixing the term of eight days, the conclusion, he remarked, gave a greater assurance than it ought to do, regarding diarrhœas, which lasted for some days, and that, in his opinion, could not but be dangerous.

That would be so, no doubt, replied M. Fauvel, if everybody considered that those diarrhœas were choleraic as M. Mühlig would make them out to be, but to many physicians they were not so, to others they were doubtful; and the members of the Committee were of this number.

Some Delegates asked for a division on the last chapter of the report, and others for a division upon M. Mühlig's motion.

M. Pelikan moved that the vote upon this question should be postponed, as it deserved, in his opinion, to be discussed at greater length, being the basis of quarantine measures.

M. Sawas seconded the motion; the adjournment, he added, was also rendered necessary by the absence of the rgeater part of the Delegates, who should be present in the interests of the discussion.

A great many members requiring the termination of the discussion, His Excellency the President first put M. Mühlig's proposition to the vote.

It was rejected: having obtained seven ayes against 13 noes; MM. Vernoni and Sawas declining to vote.

His Excellency the President then put to the vote the conclusion of the 33rd Chapter of the report. It was adopted by a majority of 15 to 4, and 3 abstentions.

Ayes: MM. Polak, de Nodians, Segovia, Spadaro, de Lallemand, Fauvel, Goodeve, Maccas, Bosi, Testa, Lenz, Bykow, Hübsch, Salem Bey, and Bartoletti.

MM. de Lallemand and Maccas stated that they voted in favor of the conclusion under reserve with reference to the second part thereof.

Noes: MM. Monlau, Millingen, Gomez, and Mühlig.

Abstained from voting:—MM. Vernoni, Keun, and Sawas.

The discussion of the general report having come to a close, His Excellency the President making himself the interpreter of the sentiments of the assembly, thanked the various Committees, which had contributed by their labors and their reports to the drawing up of this important document. He specially thanked M. Fauvel, who had been so successful in reducing to shape and order and bringing forward before the Conference the immense quantity of the materials of the Committees.

M. de Lallemand called the attention of the honorable Conference to the reprinting of the general report as an annexure, and also to the printing of the reports of the Committees appointed to consider the questions of the 3rd group. If it were desired to print all the reports in the same printing office in which the minutes of the Conference were printed, there would be a considerable loss of time, for, besides the general report, which would have to be printed as an annexure and the special reports of the Committees, about ten minutes of proceedings would remain to be printed. All this, he thought, could not be done by one press, and he proposed, therefore, with a view to save time, that the reporter of each Committee should be authorized to have his report printed elsewhere than in the central press, and also that the same might be done with the general report, if the Conference thought it necessary.

M. Fauvel seconded M. de Lallemand's motion; but with regard to the general report, he was of opinion that the Conference ought to have it reprinted, the amendments and additions adopted by the Conference being shown in notes, and references being made to the minutes in which these additions were spoken of in detail.

M. Keun also showed the necessity of adopting the plan proposed by M. Fauvel, and maintained that in the reprint of the general report the additions or amendments adopted by the Conference ought to be shown in the margin or in notes: in his opinion this was the only logical course that could be adopted.

M. Bykow expressed the same views, and several other Delegates followed suit.

A discussion ensued between MM. Fauvel de Lallemand, Bosi, Maccas, Keun, and Bykow, on the one hand; in support of M. Fauvel's motion, and MM. Segovia, Monlau, and Sawas on the other, against it.

The President consulted the Conference, which decided by a majority of 15 against 9, and two abstentions, in favor of M. Fauvel's proposition.

Ayes :—MM. Spadaro, Goodeve, Dickson, Kalergi, Maccas, Vernoni, Keun, Millingen, Testa, Mühlig, Lenz, Bykow, Hübsch, Salem Bey, and Bartoletti.

Noes :—MM. Polak, de Noidans, Segovia, Monlau, Bosi, Mirza Malkom Khan, Sawas, Gomez, and Stenersen.

MM. de Lallemand and Fauvel declined to vote.

It was also decided that the general report should be printed as an annexure to the minutes of the 9th meeting, with a short note explaining the delay in reprinting it.

The Conference also unanimously adopted M. de Lallemand's proposition, *viz.*, to have the various reports of the Committees printed elsewhere than at the central press.

The meeting terminated at 6 P. M.

It was decided that the next meeting should take place as soon as one or more reports of the Committees were ready so as to permit the Conference to resume its labors.

Order of the day for the next meeting :—

Submission and reading of the reports of the Committees.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE, DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 23, OF THE 5TH OF JULY 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its twenty-third Meeting on the 5th of July 1866, at Galata-Serai.

PRESENT :

For Austria :

M. Vetsera, Councillor to the Internonciature of His Imperial Majesty.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

For Belgium :

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain :

Don Antonio Maria Segovia, Consul-General, Chargé d' Affaires.

Dr. Monlau, Member of the Superior Council of Health in Spain.

For the Papal States :

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health of Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health of Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health of Constantinople.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, College Councillor, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The Meeting commenced at 1 P. M.

Baron de Collongue, one of the Secretaries, read the minutes of the 21st Meeting.

With reference to these minutes, and after their adoption, Dr. Goodeve stated that he did not altogether agree with the passage in Chapter XXIV, paragraph 2, commencing *but it must be admitted,* as far as *only it takes a longer time to be accomplished in,* inclusive. He added that it was from forgetfulness that he had not made this declaration before the Chapter had been put to the vote, and he requested that it should be entered in the minutes of the present Meeting.

Dr. Bartoletti laid upon the table, after having read it, the report of the Sub-Committee appointed from among the members of the General Committee and consisting of Dr. Goodeve as president, MM. Bykow and Salvatori as members, and himself (Dr. Bartoletti) as reporter, which Sub-Committee had been appointed to write an historical précis of the epidemic of 1865 (annexure to the present minutes).

The Conference warmly seconded the motion of His Excellency Salih Effendi, who proposed that Dr. Bartoletti should be congratulated upon this remarkable work.

Dr. Gomez, the writer of a note communicated to all the members of the Conference, from which Dr. Bartoletti had taken his information regarding the march of the epidemic in Portugal, observed that the report did not reproduce certain facts which were mentioned in that note, and which deserved mention. Mention was made of the importation of cholera into Porto by a woman who had come from Elvas, where the disease was raging, and who communicated the disease to almost all the occupants of the house in which she lodged. Why did the report not add that this house was most completely isolated, and then subjected to careful measures of sanitation, and that it was no doubt owing to the rigorous application of these measures that it was found possible to prevent the propagation of cholera in the town, where its ravages were confined to the house first attacked. Cholera had, moreover, made itself felt in Portugal elsewhere than at Elvas, Treixo de Spada, and Porto, the only towns mentioned by Dr. Bartoletti: at Lisbon, notably, there was a real epidemic of choleraic diarrhœa or cholerine. Dr. Gomez requested that the report should be completed in this respect.

Dr. Bartoletti replied that what was required in the programme was simply a history of the march of cholera, and that the Committee could not enter into the details of the means to which recourse was had for opposing the disease in the various countries and places it had successively visited. Nor did the Committee think itself called upon to speak of the epidemics of cholerine which occurred at a somewhat large number of places in 1865.

Dr. Goodeve regretted that he had been unable to concur in the report which the Conference had just heard read, except under reserve. It did not appear to him *to be quite certain*, as was said in the report, that cholera had been imported direct from India into the Hedjaz and the East of Arabia by the Indian and Javanese pilgrims. What had occurred on board the ships conveying the pilgrims was not known with sufficient precision ; the only ships with regard to which they were well informed had been attacked after having touched at Mokalla, where cholera was raging. Dr. Goodeve added that it had been found impossible to prove how cholera had come to Mokalla, but that it was probable at the same time, according to the information they possessed, that the disease existed in Yemen, and especially at Sana, at the end of 1864.

M. Keun concurred in the report, but under reserve with respect to the passage regarding the two ships which, last year, arrived at Jeddah direct from Java with pilgrims. According to all the information he had collected, and also according to the report of the Dutch Consul at Singapore, quoted by Dr. Bartoletti, there was no direct navigation between the Dutch colonies and the Red Sea. He believed that the Ottoman Commission of the Hedjaz, in the report whence Dr. Bartoletti had taken his information, must have been misinformed.

M. Keun then quoted a fact whence it would result that the choleraic germ had existed at Alexandria, where, nevertheless, the epidemic did not make its appearance till the beginning of June, since the commencement of May. The Sister-Directress of the Institute of Deaconesses of Smyrna, from whom M. Keun had received these details, came to Alexandria in the beginning of the month of May ; there she was seized, on the 13th, with vomiting and diarrhœa accompanied by cramps, which promptly disappeared before energetic treatment applied, but she was reduced to such a state of weakness that she was compelled to re-embark immediately and return to Smyrna. The Lloyds' ship, on which she made the voyage and which was overcrowded with pilgrims returning from Mecca, lost six passengers from dysentery on the second day of the passage.

In the opinion of Dr. Bykow, who referred to the observations previously made by Dr. Goodeve, the facts mentioned in the report clearly proved that cholera had been imported into Mokalla by arrivals from Bengal. The disease having existed in that country some time previous to its appearance at Jeddah, and many cases of cholera having

occurred on board the ships which brought pilgrims from Bengal, during their passage, the Committee could not have concluded otherwise than it had done.

The report was then put to the vote by His Excellency Salih Effendi and adopted unanimously. Present at the division: Dr. Polak, Count de Noidans, M. Segovia, Dr. Monlau, Count de Lallemand, Dr. Fauvel, Dr. Goodeve (under reserve), Dr. Dickson, Dr. Maccas, M. Vernoni, Professor Bosi, M. Keun (under reserve), Dr. Millingen, Dr. Lenz, Dr. Bykow, M. Stenersen, His Excellency Salih Effendi, and Salem Bey.

The Meeting terminated at 5 P. M., no date being fixed for the next meeting. His Excellency Salih Effendi mentioned that he would convene the Conference as soon as the Reports of the Committees appointed to consider the questions of the 3rd group of the programme were ready for submission.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE, DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO MINUTE No. 23.

Report to the International Sanitary Conference on the march and mode of propagation of Cholera in 1865.

Submitted by the Sub-Committee (6th Section) consisting of Dr. Goodeve, *President*, Dr. Bykow, Dr. Salvatori and Dr. Bartoletti, *Secretary-Reporter*.

GENTLEMEN,—We have the honor to submit our report on the article of the programme assigned to us by you for development, *viz.*—*A general review of the march and mode of propagation of Cholera during the epidemic of* 1865.

At first sight, it would seem that this important subject ought to include a complete historical narrative of the march of the last epidemic, in every place to which it penetrated, from the day it made its appearance at Mecca to the last point to which it extended its ravages. If this were so, the Committee would have required, to do justice to the subject, a mass of statistical documents, and a great quantity of precise information, which exist perhaps scattered about in archives, but which have not yet, as far as we are aware, been collected or published anywhere. We therefore understood the object of the programme, in proposing the subject in question, in a more restricted sense, which, however, is none the less interesting because it is so restricted, *viz.*, to

demonstrate by the march of cholera the mode of its propagation in the various countries successively or simultaneously invaded by it; in other words, the question to our minds is, not to write the history of cholera in an abstract statistical point of view, but to collect the most striking and prominent facts connected with its march, with the object of thence deducing the proof of its importation by man from an unhealthy to a healthy place; or, on the other hand, to establish the principle of the diffusion of the epidemic by the atmosphere without the aid of sick men or contaminated articles.

The question being fixed within these limits, we traced out, for the exposition of the facts we are about to record, a method which seems to us to be as simple as it is rational. We take cholera at its nearest point of departure with which we are acquainted, *viz.*, the Hedjaz, and we follow it in its violent peregrination across Egypt, the Mediterranean, and even beyond the Atlantic Ocean, being careful to indicate the dates of its appearance in the localities in which it raged with greater or less intensity, as also the chief sources whence we have taken our information. We then notice, in chronological order, the outbreak of secondary foci and their radiation as far as the localities last attacked, and we follow up our review with some remarks which form its corollary and conclusion.

We have no document in our possession from which we can say with certainty that cholera did not exist in the Hedjaz, even sporadically, before the arrival of the pilgrims of 1865. But what we can affirm is, that no mention of it was made in the letters from Jeddah before the arrival in that port, about the end of February or the beginning of March, of the *Persia* and the *North Wind*. The manifestation of cholera in the Hedjaz followed then upon these two arrivals. In fact, M. Bimsenstein, a sanitary medical officer of the Ottoman Government in Egypt, announced, under date the 20th February 1866, that he had heard from Mr. Calvert, the British consul who happened to be stationed at Jeddah at the period of the pilgrimage, that cholera had broken out on board these two ships, which had come from Singapore, and had put in at Cochin and Mokalla. Dr. Goodeve has furnished us with a report by Mr. Calvert, dated at Jeddah, March 10th, 1865, announcing that these two sailing vessels, carrying the British flag, had arrived at Jeddah with 1,066 passengers, the greater part being Javanese, and 96 men forming their crews, being a total of 1,162 persons; that cholera having declared itself on board, the *Persia* lost during the voyage 85 passengers and eight seamen, the *North Wind* 43 passengers and seven seamen, making a total of 143 persons; and that the two captains of the *Persia* and the *North Wind* agreed in stating that the disease by which their ships had been stricken was cholera, which had declared itself on board after they had touched at Mokalla, where the passengers and crew had made an immoderate use of fish of bad quality and brackish water, better water not being procurable in those parts.

A report by the Austrian Delegate to the Council of Health at Alexandria (*communication by Dr. Sotto*) supports all this information,

which it supplements and completes, except in one point, on which it is found not to agree with the declarations of the captains of the *Persia* and the *North Wind*. It refers to Mokalla. Mokalla is a port situate in the Hadramaut on the south-eastern coast of the Arabian peninsula. A number of ships proceeding to the Hedjaz carrying Javanese and Indian pilgrims, put in there for the purpose of re-victualling. This practice is followed by the greater part of the English and native vessels, these latter sometimes sailing under the British flag. According to the report of the Austrian Delegate, two of these ships, the *Persia* and the *North Wind*, must have carried cholera to Mokalla, where the disease did not exist before their arrival. Other ships having afterwards put in at Mokalla, must have become infected and disseminated the germs of the disease on the coasts of Yemen and the Hedjaz even before their arrival at Jeddah. Whichever of these two contradictory versions with regard to Mokalla may be correct, it is certain that cholera was imported into the Hedjaz by pilgrim ships from India.

This fact is shown still more clearly by the particulars furnished by the Ottoman Commission of the Hedjaz in its report of the 5th April, from which we extract the following passages:—"Captain Hadji Emim "Eddin, of the English ship *Meris Merchant*, has declared in writing, "signed by himself, that in 1865, he brought 350 pilgrims, of whom 29 "died of diarrhœa, from Bengal to Jeddah ..... Captain Abdool "Mahomed, of the British vessel *Boy-Meyr* has made a declaration, to "which he has affixed his signature, that cholera existed in Bengal "when he left that country on his voyage, to Jeddah, and that out of "100 pilgrims whom he had taken on board, 20 died during the voy- "age, four of the deaths being cholera cases characterised by diarrhœa, "vomiting, the body becoming cold, the eyes sunken, &c.....Cap- "tain Choualsky states that in 1865 he left Singapore in command of "the *Ruby*, with 500 pilgrims on board, 90 of whom died of cholera "during the voyage, the mortality commencing at Mokalla and ceasing "two days before the arrival of the vessel at Jeddah. Moreover, the "harbour-master at Jeddah reported 51 ships from India, Java, Bassora, "and Muscat, of which two from Java, and one from Bengal had had "sickness on board."

On the other hand, we find in a despatch from the Consul-General of the Netherlands at Singapore, for which we are indebted to the courtesy of Dr. Millingen, the following extract:—"There is no doubt "that the appearance of cholera in Arabia is to be partly attributed to "the pilgrims going there from Singapore .....They are not all sub- "jects of Netherlands India, but there are amongst them aborigines, "inhabitants of Malacca, of Sarawak, of Johore, of Pahans, of Mnar, and "of all the small free States of the Malayan Peninsula.....In 1864 it "is said again in the despatch cholera raged at Java and Singapore, and "proofs exist that persons suffering from cholera and others recovering "from an attack of the disease embarked on board sailing vessels for "the Hedjaz."

In face of all this official testimony which deserves the fullest confidence, it seems certain that cholera was imported in 1865 into the Hedjaz by infected arrivals from India and Java.

Towards the end of April it became known at Alexandria that cholera was raging at Mecca and Medina amongst the pilgrims. A Commission, consisting of two Mussulman physicians was despatched to the Hedjaz by the Sanitary Intendancy of Egypt, with instructions to consider and study the nature and extent of the epidemic thoroughly. In its report dated the 10th May 1865, the Commission mentioned particularly that the mortality amongst the pilgrims had been very great, principally at Arafat, during the three days of the festivals, and that the cause of this mortality was *cholerine*.

The Commission recorded several cases of this disease amongst the pilgrims, the military, and the inhabitants of the town. It met with corpses lying in the streets, and a great number of dead in the mosques.

On the third day of the fêtes, the mortality on the mountain, to judge only by the cries and lamentations usual in funeral ceremonies amongst the Arabs, must have been more considerable than on the preceding days.

At Mecca, the number of persons who died of cholera on the same day was estimated at 200.

At Jeddah, the Commission saw, in a hospital containing fifty beds, twelve patients suffering from *cholerine*, of whom five died and seven were discharged cured. (*Dr. Bimsenstein's Report*). It does not seem, after all, that the Commission furnished a complete report of its mission, either in the diagnostic point of view of cholera, naively called by it *cholerine*, or in the point of view of its march and ravages among the pilgrims. Nor does it mention the commencement of the epidemic, a question which for many reasons it is of the highest importance to be acquainted with. To fix the number of the victims of the epidemic, without having a sure base to rest upon, would be a rash thing to do, but we know that the Dutch colonies, out of ten thousand Javanese pilgrims sent thence to Mecca, furnished a contingent of three thousand dead. (*Dr. Millingen*). Now the pilgrimage, according to the estimate of the British Consul at Jeddah, having this year attained the number of ninety thousand souls, it may be deduced from this that cholera carried off a total of thirty thousand pilgrims, or one-third of the whole number. This estimate will not seem exaggerated if we consider particularly that the Javanese are not the worst off among the pilgrims, and that the Indians and the negroes, who are the poorest, must have been stricken by the disease with proportionately greater violence. However, according to the approximative calculations of the Ottoman Commission of the Hedjaz, this figure should be reduced by half, for it estimates the number of pilgrims who fell victims to the epidemic at fifteen thousand only.

Let us pass on to Egypt, and see, in the first place, under what conditions the transport of the pilgrims from Jeddah to Suez was effected. From the 19th May to the 10th June, that is to say within the space of twenty-three days, ten steamers, seven of which were Egyptian and three under the British flag, landed at Suez from twelve to fifteen thousand hadjis coming from such an intense choleraic focus as the one we have just left. The number of pilgrims embarked on each vessel varied between nine and twelve hundred. The *Sydney*, however, was an exception, for, in its first voyage, it carried two thousand. *(Report by Mr. Arthur Raby, British Consul at Jeddah, communicated by the British Delegates).*

The official declarations state that the health of the passengers was perfect, and that some deaths which occurred during the passage (from six to eight on each vessel) resulted from ordinary *non-contagious* diseases. In consequence, after a medical visit, they were admitted to pratique at Suez. Unfortunately, the declarations made to the Egyptian sanitary authorities were opposed to the facts, seeing that a great number of pilgrims had died en route of cholera. The *Sydney*, British steamer, must have alone lost more than a hundred out of her two thousand passengers (*Bimsenstein.*)*

On the 19th May, the first English steamer with pilgrims on board, and which had cast her dead overboard arrived at Suez from Jeddah. On the 21st, some cases of cholera declared themselves at Suez, and amongst the number were the captain of the steamer and his wife. On the 23rd May, a case was observed, by a doctor of the Canal Company, at Damanhour, in a convoy of pilgrims proceeding from Suez to Alexandria. *(Dr. Aubert Roche's Report to M. de Lesseps).*

In this way towards the end of the month of May, from twelve to fifteen thousand pilgrims traversed Egypt by railway and encamped close to the Mahmoudieh canal at Alexandria. The first who were attacked by cholera were the Arabs from the neighbourhood, who had hastened to fraternise, according to the Mussulman custom, with the newly arrived hadjis. On the 2nd June, the first case occurred among the citizens of Alexandria, who lived in communication with the pilgrims. On the 5th, June two other cases declared themselves under the same circumstances. From the 5th to the 11th the cases increased. But the physicians of the Sanitary Intendancy saw in these first accidents only cases of algid pernicious fever, cholerine, or sporadic cholera. *(Bimsenstein).*

Not till the 11th June were the sanitary authorities convinced, and not till then did they mention, on the bills of health of ships about to leave, the appearance of the epidemic which was about to decimate the population of Alexandria and carry off four thousand victims in the space of two months. From the 11th June to the 23rd July,

* *N. B.*—We deem it necessary to remark that we think there must be some error in figures here; the *Sydney* could not have had more than eight or ten deaths from cholera during the passage.

cholera invaded all Egypt by degrees, giving up to death, in less than three months, more than sixty thousand of the inhabitants of the country. *(Colucci Bey. Reply to twelve questions.)*

The panic with which the foreigners especially were seized, gave rise to an emigration of from thirty or thirty-five thousand persons, who, aided by steam navigation, threw themselves suddenly into the chief commercial towns of the Mediterranean, Beyrout, Cyprus, Malta, Smyrna, Constantinople, Trieste, Ancona, Marseilles, &c. We are about to see cholera showing itself at most of these places, following the track of the fugitives and the route taken by steam navigation.

We too, in this review, shall follow the same road, and as far as possible, in geographical order; we shall then make our remarks upon the facts reported and the accidents connected with them, in order to indicate the mode of propagation. We believe that the result will be to afford profitable data in a prophylactic point of view.

On the 28th June, at a time when neither cholera, nor any thing like what are called the precursory signs of this disease, existed at Constantinople, the Ottoman frigate *Moukbiri Sourour* arrived in port, having left Alexandria on the 21st. The officer in command and the ship's doctor not having reported either deaths or cases of sickness, the frigate was admitted to pratique, in accordance with the article of the regulations by which it was granted to every vessel having a doctor on board and passing five days at sea without any choleraic accident. That evening twelve sailors were landed from the frigate at the hospital of the Imperial Marine, all suffering more or less seriously from cholera, one of them dying during the course of the night. It was made known subsequently that some cases of diarrhœa had been observed among the crew after the departure of the vessel from Alexandria, and that—a much more serious matter—two sailors had sunk under cholera between the Dardanelles and Constantinople. The next day, the 30th June, nine more patients were landed from the same vessel, two of whom were suffering from confirmed cholera. *(Gazette Médicale de l' Orient et Archives de l' Intendance Sanitaire.)* And here we have the starting point of a frightful epidemic which spread itself sometimes gradually, advancing from one point to the next: sometimes leaping from one place to another, crossing between different quarters, but always preserving a connection in the first accidents, and a most remarkable linking of facts, such as is seldom to be found in the funeral triumphs of the Indian scourge. We should exceed the limits of the directions given to us were we to transcribe here all the precious information given to us by Dr. Mühlig regarding the commencement of the epidemic in the arsenal of the Imperial Marine and its progress towards the environs of that establishment; but we shall briefly mention that from the 5th to the 15th July, the ships anchored in proximity to the arsenal, the barracks and the workshops of the employés, comprised within its boundaries, furnished seventy-one attacks and twenty-six deaths. At the same time, from the 9th to the 15th July, cholera spread, first in the quarter of Kassim Pasha, bordering on the arsenal, and thence to the neighbouring

quarters of Emin-Jami, Yeni-Shair, and so on throughout the town, its suburbs, and the villages of the Bosphorus. The epidemic attained its greatest intensity and violence during the first few days of the month of August, and then progressively declined. The last cases were observed during the month of September. The number of deaths, according to the most moderate estimates, is reckoned at from twelve to fifteen thousand out of a population of nine hundred thousand souls. *(See Dr. Mongeri's interesting work on the epidemic of cholera which prevailed at Constantinople in* 1865*).*

DARDANELLES.—The number of passengers arriving from Alexandria and who performed quarantine at the Dardanelles, from the 29th June to the beginning of August, was two thousand two hundred and sixty-eight. The maximum number of persons shut up together in the lazaretto and its out-buildings amounted, at one time, to nine hundred. The place was crowded then, and it became a difficult matter properly to separate the different categories of persons in quarantine.

The period of quarantine lasted at first for five days, but was afterwards extended to ten, on the express order of the Government. During the continuance of the epidemic, there were not more than twenty-two cases of cholera in the lazaretto (sixteen of whom were landed suffering from the disease), fifteen deaths and seven recoveries. The two first cases, one of which was followed by rapid death, occurred on the 1st July, amongst the passengers landed from the *Tantah*, an Egyptian vessel, which had arrived from Alexandria on the 29th of June. Fresh cases occurred, and cholera patients were landed in succession from on board other ships coming from the same place. On the 12th of July, the second death took place in the lazaretto. On the 9th of August, the last was reported. Amongst the persons connected with the service of the lazaretto, several contracted the disease: *1st*, Ahmed, a boatman, who took the doctor to the lazaretto on his daily visits, and who died in town; *2nd*, Hajji Mehemed, deputy-keeper, who was attacked after having for a long time continued to perform his duty in letting out those who had completed the term of their quarantine—he was cured; *3rd*, two health officers employed inside the lazaretto, one of whom died; *4th*, a guard, who had performed a quarantine of ten days, fell ill two days after being admitted to pratique—he died in the town.

From the 29th June to the 15th September, thirty-three steamers and a hundred and twelve sailing vessels, their crews amounting altogether to 3,058 persons, performed quarantine at the Dardanelles. The Austrian steamer *Archduke Maximilian*, which arrived on the 30th of June, had two cases of cholera on board, and one death. The Italian brig *Mirra* arrived on the 2nd July, having lost a sailor. The *Charkié*, Egyptian steamer, arrived on the 7th July, and landed a sick man. The *Minia*, Egyptian vessel, arrived on the 8th July, having had two fatal cases of cholera on board within a few hours of her arrival at the Dardanelles. The *Jafferiah*, Egyptian vessel, arrived on the 9th July with five sick men, who were landed at the lazaretto. The *Eiling*, a Norwegian ship, arrived on the 22nd July, having lost one of her sailors

on the passage. All these ships came from Alexandria. The *Tamise*, French steamer, from Constantinople, landed at the lazaretto of the Dardanelles, on the 22nd July, two cholera patients, who soon died there.

We have just noticed, on the 30th of June, the first case at the lazaretto. On the 12th July a soldier, on guard at the door of the lazaretto, was attacked. He was removed to the military hospital and placed in the same ward with the other patients, no precautions being taken. From the 12th to the 14th, three cases of cholera in the town were reported, all at different places and all fatal: one was the boatman Ahmed, of whom mention has been made above; the other a provision merchant, who frequented the neighbourhood of the lazaretto in the pursuit of his calling; the third was the keeper, also mentioned above, who fell ill two days after his departure from the lazaretto where he had undergone quarantine. After these first accidents, cholera spread in the town and among the soldiery, especially at the fort of Nagara, attached to the lazaretto, whose little garrison of twenty-five men was in constant communication with the guards of the lazaretto. In this fort, in the course of three days, five men died out of seven who were attacked. In the town the disease varied between two and three cases a day until the 24th July. From that date, it increased progressively to the extent of twenty-two cases, remaining stationary from the 1st to the 12th of August, when it decreased continually till the 30th and finally disappeared. Out of a population of eight thousand souls, from which two thousand fugitives must be deducted, three hundred and sixty-nine deaths, including twenty-seven soldiers were reckoned. The attacks amounted approximatively to five hundred and fifty. From what has been said, it clearly appears that the cholera imported from Alexandria into the lazaretto, spread from thence into the town.

ENOS.—The number of ships which performed quarantine in the port of Enos during the existence of the epidemic, that is to say, from the 4th July to the 8th December, amounted to seventy-nine, the crews numbering 579, passengers 63, health guards 34, among whom there was not a single case of cholera, nor even any choleraic indisposition or diarrhœa. However, on the 26th October, the first case of cholera reported was that of an inhabitant of Enos, named Stamati Aïvaliotis, aged fifty years, a mariner by profession, and who had arrived thirteen days previously from Chio, Mytelene, and Cheshmeh in a ship under a clean bill of health,—he died during the evening. On the 30th his daughter, sixteen years old, fell ill, and sank within a few hours from the commencement of the attack. On the 27th a young girl, fourteen years old, was attacked in the morning and died at seven in the evening. The same day a carpenter named Maccaradji was attacked; he also died in the evening. His wife died on the 29th. Finally, on the 31st, a man named Schinas died of cholera, after a brief illness. There were in all, in the space of twenty-three days and in a population of four thousand souls, fifteen cases of cholera followed by death, all of the men affected being inhabitants of the town, except a man named Jovani who had come from Gumurdjina a month before. The sanitary physician of Enos, who

records this fact, asks, "What can have been the origin of this small epidemic?" Without being able to solve the question, he makes the remark that the subject of the first case had had, two days after his arrival at Enos, an attack of intermittent fever, of which he cured himself by taking a purgative and some sulphate of quinine. He observes also that on two occasions a breach of the regulations occurred with regard to the ships in quarantine, anchored at an hour's distance from the town, but that no cases of cholera had taken place on board these ships, or on board the rafts which came down the Maritza from Adrianople.

La Cavalla.—An Austrian steamer under the command of Captain Inchiostri, which arrived from Constantinople on the 31st July, and which had thrown five corpses overboard during the passage, landed 103 passengers at the lazaretto of La Cavalla, two of whom were suffering under an attack of cholera. A third fell ill the same evening. The next day the first two died, and the third recovered. The quarantine of the healthy passengers was performed in a large locality situated at an hour's march from the town. Persons tainted with cholera were isolated in an islet strictly guarded, and many cases of cholerine were observed among them.

The number of ships which passed through quarantine, from the 3rd of July to the 6th of November, amounted to twenty-eight, eleven of which were steamers, carrying crews amounting to six hundred and thirty-five men and three hundred and ninety-six passengers. An Ottoman steamer had two deaths from cholera on board. Not a soul among the persons employed in and about the lazaretto suffered, and the town was saved from an epidemic. It was not so, however, with a place situated at a distance of about six hours' journey from La Cavalla, and here we have to bring to notice a case of importation overland, reported by the sanitary physician of the town. A woman left *Zihna*, in the district of Seres, where cholera prevailed, and arrived in two days at Chataldja, her native place. Two days afterwards, she was attacked by black cholera which carried her off in two hours. After this occurrence, on the 17th of August, the epidemic declared itself at Chataldja, and lasted till the 25th of September. During this period, there were fifty-six attacks without including slight cases, and fifty-two deaths in a population of 2,500 inhabitants.

Salonica.—During the period of the choleraic epidemic, seventy-eight ships arrived at Salonica, forty-five of them being steamers from Egypt, Constantinople, the Dardanelles, and Smyrna, carrying 4,257 passengers. The quarantine measures adopted consisted in the confinement of the passengers at first for five and subsequently for ten days, when there had been neither sickness nor death on board during the voyage, and for twenty days if there had been any cases on board or in the lazaretto. In the lazaretto there were counted, amongst the passengers, two hundred and sixty-five cases of cholera, a hundred and twelve of which were followed by death, and amongst the deaths were nine health guards. Those who fell ill were immediately separated from the healthy. The lazaretto at first was

situated at a distance of an hour's journey from the town. Sometimes it was crowded, thirteen hundred persons were counted in it at one time. Afterwards huts were built at a distance of three hours' journey from the town, but by that time cholera had ceased to prevail among the persons in quarantine. The town was not attacked, with the exception of three fatal cases of cholera, the victims being individuals who had come from the lazaretto. Several villages, and notably Galatzitta, through which persons who had undergone quarantine passed, and where they halted, were very badly treated by the epidemic. Cholera spread as far as the environs of Seres, where it lasted for a long time.

At VOLO the number of ships which arrived under foul bills of health, marked cholera, was twenty-five, having on board 526 sailors and 2,265 passengers. Amongst these ships, the *Perter-Piale*, coming from Salonica, where cholera existed in the lazaretto, had two deaths on board during the passage, and landed two sick men, both of them died the next day. The French mail steamer, the *Clyde*, which arrived on the same day as the vessel just mentioned, sent three cholera patients to the lazaretto, two of whom died two days afterwards. The two steamers together carried 1,649 passengers, who underwent their quarantine under tents in a desert islet in the gulf of Volo. From the 26th of July to the 10th of August, sixty-two cases of cholera, twenty-three of which resulted fatally, were observed among the persons in quarantine. Of these cases, five had declared themselves before the disembarkation, and fifty-seven after entrance into the lazaretto. Moreover, the persons employed in the lazaretto, health officers, and gendarmes, furnished nine attacks and four deaths. In this number were included the office clerk and the physician of the lazaretto. The latter recovered. There were neither attacks nor deaths in the other twenty-three ships. A breach of regulations took place: the doctor employed in the lazaretto, M. Diomedes, when attacked by cholera, fled to the town on the 30th August, but no results followed upon this occurrence. Besides, although the town had been preserved from cholera, the disease had already shown itself, at distances of from five to ten miles from Volo, in villages which had been in communication with infected localities. Out of one thousand and fifty-one inhabitants, there were thirty-two deaths. In the town only one case was observed in the person of an individual who had come on the 19th of September, that is to say, forty-two days after the last case in the lazaretto, from one of the abovementioned villages.

LARISSA, as well as all Thessaly, had enjoyed perfect health until the end of November. At that time there came from the province of Monastir, and especially from a place called *Florina* (32 hours' journey distant) where cholera existed, between three or four hundred Bulgarians, with the object of engaging, as usual with them every year, in some occupation during the winter. Cholera appeared at Larissa simultaneously with their arrival. From the 5th to the 15th December there were eighteen cases, seven of which ended in death. The Bulgarians came from an infected country, and they furnished the greater number

of the cases; the others were persons inhabiting the same quarter as, and living in houses close by the dwellings of, the Bulgarians. The disease ceased with the departure of these foreigners, who took to flight. The localities that had become contaminated were disinfected.

SMYRNA.—From the 23rd of June to the 24th October, 1,701 persons were received into the Smyrna lazaretto, coming from various places infected with cholera and under very bad hygienic conditions, among whom there were fourteen attacks of cholera, nine of which ended in death. On the 23rd June, the Austrian steamer *Archduchess Charlotte*, from Alexandria, landed two hundred and ninety-three passengers at the lazaretto, amongst whom was a young Turk, suffering from cholera, who sank on the 29th June. This was the first case. Amongst these passengers, one fell ill on the 24th and died in the evening; two children and their mother, who fell ill between the 24th and 26th, recovered. On the 24th the Egyptian steamer *Gallioub* arrived; it landed one hundred and nineteen passengers at the lazaretto; among them were three cholera patients, one of whom died on the 4th of August. On the 29th the Austrian steamer *Archduke Maximilian* brought 130 passengers, with five sick, three of whom died. Between the 7th and 8th July, the ninth day of arrival, one of the passengers was suddenly attacked by cholera and died in the space of five hours. On the 6th of July, the Egyptian steamer *Minia* landed at the lazaretto 213 passengers, of whom three were suffering from cholera; two of these died. On the 8th July, the Austrian steamer *Stamboul* arrived with 187 passengers, two of whom, cholera patients, died in the lazaretto between the 11th and 12th of July. All these vessels came from Alexandria, where cholera was causing great ravages, while Smyrna had up to this time enjoyed perfect health, with no appearance of cholera symptoms.

The first case of cholera in the town occurred on the 24th of June, the person attacked being an Armenian woman. Her husband was next attacked and died on the 4th July. On the 29th June the second case, which rapidly proved fatal, was that of a Greek woman, who had rubbed down the former and who lived in a different quarter. From the 24th June there were several sudden fatal cases in town, but the progress of the epidemic was slow until the 11th July. It then broke out in the Jewish quarter, and gradually invaded the entire town; the mortality then increased to 80 a day. From the 30th July to the 7th August, it attained its greatest violence, then it declined, and finally ceased at the commencement of September. In a population of one hundred thousand souls, without taking into account an emigration of thirty or forty thousand, there were from 2,100 to 2,500 deaths, and the number of attacks is estimated at 5,500, or about one attack in every twenty inhabitants. In the month of September, the disease spread to Sokia, Thira, Kassaba, and other surrounding localities, and then in succession among the tribes of Adala, where it caused more or less desolation.

THE ISLAND OF MYTELENE escaped the attacks of cholera, although during the period of the epidemic, it received into its chief port two

hundred and thirty-five ships, which underwent quarantine, manned by fourteen hundred and twenty sailors. Seventy steamers besides put in at this port, landing 775 passengers at the lazaretto. The total number of persons who performed quarantine amounted to 2,655. They underwent quarantine in spacious encampments, under tents and huts. Two cases of cholera only were reported, one on board the Ottoman war steamer, the *Zouave*, from Constantinople, the other being the patron of a Greek bomb vessel coming from Smyrna. But these two cases occurred on board and remained isolated.

RHODES.—Among the islands of the Grecian archipelago, Rhodes, the most exposed by its intermediate position between Alexandria, Smyrna, and Constantinople, received in the space of two months a large number of choleraic arrivals, sailing vessels 222; steamers 66; crews 2,501; passengers 2,618; total 5,119 persons. On the 19th June, the Egyptian steamer *Niguilah*, from Alexandria, landed eighty-seven passengers in very good health at the lazaretto. No accident had occurred during the voyage of this ship, according to the result of the survey, yet on the 20th June, a man named Antonio fell ill of cholera and expired on the same day. The other passengers on board this ship were immediately transferred elsewhere under tents, and, after a quarantine of ten days without cholera appearing, were admitted to pratique. Not a case of cholera was observed on board the ships performing quarantine; but as much cannot be said for the steamers which staid at Rhodes for a few hours only to finish their business transactions, cases may have occurred on board these vessels after they left the island. Be this as it may, the population of the island, which amounts to thirty-three thousand souls, was not attacked.

CRETE.—Crete received one hundred and three ships with foul (cholera) bills of health, coming from Egypt, Smyrna, and Constantinople. They were manned by crews amounting to 843 men, and carried 972 passengers, of whom 184 performed quarantine on board, and 788 on three islets where huts had been erected and encampments prepared. The supervision was strict and rigorous; no communication was allowed between the different islets, which were situated at a certain distance from each other. The quarantine lasted for ten days; in the event of cholera appearing, it was further prolonged for ten days after the accident.

Two ships, from Alexandria, brought cholera patients with them: the steamer *Missiri*, with two hundred and fifty passengers, had two deaths in port; a Turkish brig, with fifty-eight passengers, had four cases of cholera. It was amongst the passengers of these two ships that cholera developed itself during the quarantine. Three other ships had cholera cases on board during the voyage, but without any ulterior results. The *Missiri* had disembarked its passengers on the 28th June: on the night of the 29th a man named Cavourachi, who had attended Molla Hassan, who died previous to the disembarkation, fell ill; on the 1st July, a baker and his son were attacked. All three recovered after a painful convalescence. On the 5th, a man named Nicolas fell ill, dying in twelve hours. He had attended upon his own son, who had

died on board the *Missiri*, and he had himself suffered from diarrhœa for some days. On the 5th July, two passengers and a health guard fell ill. One of the passengers died, the other underwent a painful recovery. On the 6th July, a man named Sava was attacked, and died of the disease in thirteen hours; he lived in the same tent with the Nicolas mentioned above, whom he had attended. On the 16th July a person named Antonio was attacked; he was the brother of the apothecary who attended upon the cholera patients, and with whom he was in communication. Amongst the persons employed, the health guard Mustapha was attacked on the 5th July, seven days after having first entered among the persons in quarantine; he sank on the 8th. He had attended upon the man Nicolas, who died in the lazaretto. Thus the passengers of the *Misiri*, furnished eight attacks and four deaths, besides one fatal case, that of a health guard, in the space of nineteen days from the 28th June to the 16th July.

An Ottoman brig under the command of Captain Ali Mustapha, arrived from Alexandria on the 27th July, about a month after the *Missiri*. Among her fifty-eight passengers, the greater part being workmen from Suez, there were five sick with cholera, one of whom entered the lazaretto; the other four remained on board. On the 7th August, one of the passengers named Gavala died in the lazaretto; on the 14th Gaspard Gavala; on the same day Michael Grecia fell ill, and died on the 21st; on the 28th August, another named Athanas Russo, who had been suffering from diarrhœa since his entrance into the lazaretto, died. The same day a man named George who lived with him fell ill, and died on the 3rd September. Altogether there were five deaths, the epidemic having lasted in this group for twenty-seven days.

What deserves special mention here is the fact that, not only did cholera not penetrate into the island of Crete, but that no case occurred among any batches of passengers other than those of the two ships which had brought cholera patients with them. The reason of this is that the passengers of the two vessels underwent quarantine separately in two islets in the gulf of the Suda, the islets being very distant from each other, and having no communication with each other or with the main island. The Cretans knew how to profit by the experience which had saved their country in previous epidemics.

BENGHAZI being possessed only of a lazaretto in ruins and situated in the vicinity of dwellings, the persons who had to perform quarantine were isolated under tents in well-ventilated spots distant from the town. Among eight hundred and twelve persons, there was only one fatal case of cholera, that of an individual who had landed on the 18th July from the steamer *Trablous-Gharb* from Alexandria. Two deaths from cholera had occurred on board this vessel before her arrival at Benghazi. The case in the lazaretto was not followed by any consequences either to the town or to the persons in quarantine, whose number, while the epidemic lasted, amounted to eight hundred and twelve, brought by fifty or sixty ships under foul (cholera) bills of health.

CYPRUS.—Between the 24th June and the 18th July, forty-two ships arrived at Larnaca from localities infected by cholera, carrying crews amounting to 573 men and 1,199 passengers, who passed through a quarantine in the lazaretto lasting from five to ten days. The lazaretto is built of masonry and is rather large, but is situated quite close to the town. On board the ships three sailors died of cholera, as well as the wife of an Austrian captain, whose son was also attacked but recovered.

Between the 26th June and the 13th July there were twenty-two cases of cholera, and seven deaths in the lazaretto. On the 6th July a child fell ill, three days after its entrance into the lazaretto, and died the same evening. The mother, who was attacked on the 7th, recovered after an illness of sixteen days. A young man, who had entered on the 28th June, was seized with cholera on the ninth day of his quarantine, and sank after five hours' sickness. The first case in the town took place on the 7th July, eleven days after the breaking out of cholera in the lazaretto, the victim being Mohummud Abdullah, a cavedji, who had furnished several persons with lodgings after they had passed through quarantine. The disease immediately afterwards spread to Larnaca, thence to the surrounding villages, and thence in succession to Nicosia and the other parts of the island. The number of cases at Larnaca is estimated at 438, of whom 363 died and 79 recovered, in a population of twelve thousand inhabitants, reduced to four thousand only by emigration.

MERSINA received into an improvised lazaretto, which although isolated was unhealthy on account of its position, 450 passengers, brought by ninety-seven ships of different dimensions, sailing vessels as well as steamers, coming from Smyrna, Constantinople, and Alexandria, or Beyrout, under foul bills of health, and carrying 1,953 sailors. No case of cholera occurred on board before arrival, at least according to the declarations of the captains, nor afterwards in the lazarettos. No communication took place between the persons in quarantine and the population of the town. Yet, on the 4th October, a peasant named Mohummud fell ill of cholera, and died; his wife quickly followed him. This man had come from Adana, to which place the epidemic had already penetrated by another route. Cholera then spread in town and carried off numerous victims, the greater part being poor cultivators (fellahs) inhabiting an unhealthy quarter under very unfavorable hygienic conditions.

At ALEXANDRETTA, 469 persons performed quarantine in tents and huts perfectly isolated. Amongst these persons two deaths from cholera occurred on the 10th July, the victims being men who were sick on landing. These passengers had mostly been landed from mail steamers, coming from Constantinople or Alexandria, to the number of thirty-three. No other case was observed either among the persons in quarantine or in town. The Turkish frigate *Medjidié*, which had been made to anchor at a distance, had fourteen deaths from cholera in the space of seven days. From the 10th July, when the two deaths

occurred in the lazaretto, to the 5th December, there were no cases of cholera in Alexandretta; but subsequently, the epidemic which had carried off 750 victims out of a population of a thousand at Karaghadch also declared itself at Alexandretta and carried off twenty victims out of the thousand persons comprising the population of the town. Karaghadch is only an hour's march from Alexandretta on the coast, and it is supposed that the germ of the disease was carried to it by the frigate *Medjidié*, or some other infected ship.

BEYROUT.—The number of persons who arrived from Alexandria, between the 17th June and the 25th July, amounted to 3,600. They performed a quarantine of from five to ten days, according to the nature of the case. More than four hundred were poor pilgrims on their way to their homes at the expense of the Egyptian Government. In the lazaretto there were 30 attacks of cholera, and fifteen deaths. The first fatal case in the lazaretto took place on the 29th June, the victim being a Jewess who had arrived from Alexandria on the 24th in the Austrian steamer *Archduke Maximilian*, which had had three cases of cholera, one resulting fatally, on board during the voyage. The keeper Hamoud, who had carried the corpse of this woman on his back for the purpose of interring it, was attacked some hours afterwards, and died during the night. The Abbé Vialé, Secretary to Monseigneur Valerga, patriarch of Jerusalem, arrived on board the same mail steamer and left the lazaretto on the 3rd July: he fell ill the same day and sank during the night. The keeper Pedros, who had helped to bury the dead, also died. Another keeper, Joseph Tarsouf, who had attended as a domestic servant upon a family consisting of a mother and daughter, the father having died of cholera in the lazaretto on the 1st July, was attacked on the 3rd, and died two days afterwards.

The lazaretto was isolated and well ventilated, but it was crowded, and consequently communication took place between the different classes of persons in quarantine. The proper lazaretto, situated to the east of Beyrout, could not hold more than three hundred persons, it was therefore supplemented, on the beach opposite the west of the town, by some isolated houses and an hotel.

The number of ships which arrived under foul bills of health, from the commencement of the epidemic to the 13th July, amounted to fifty, carrying altogether crews amounting to 950 men and 3,600 passengers. Between the 22nd June and the 8th July, six ships, two of which were steamers, had had choleraic accidents on board during the passage from Alexandria to Beyrout, the number being twelve attacks and four deaths; the English steamer *Tamanlipas*, 22nd June, 277 passengers, one death; the British war-corvette *Cosak*, 25th June, three attacks; the Turkish brig *Fathalla*, 29th June, 41 passengers, three deaths; the Turkish ship *Saida*, 8th July, 51 passengers, one death; the Egyptian steamer *Dossouck*, 8th July, 93 passengers, one death.

The first case of cholera in the town was observed on the 1st of July, the victim being a young man, Matta Farrah, who had nothing to do with the lazaretto. But already, since the 22nd June, ships from

Alexandria had been bringing a mass of travellers as well as cholera patients into the Beyrout lazaretto. Before these arrivals the sanitary condition of Beyrout had been satisfactory. There were only a few cases of diarrhœa, dysentery, and bilious and gastric fevers, displaying no extraordinary features, for these diseases are common to the country at this time of the year. The total number of deaths, during the three months the epidemic lasted, amounted to 493 in 1,500 attacks. The population, which amounts to seventy-five thousand souls, was reduced by two-thirds through emigration.

ALEPPO.—The first case of cholera was reported on the 15th August. Until then the public health had been good, and there were no warnings of intestinal disorders, of a nature to cause one to foresee the near approach of an epidemic. But cholera was already at the gates of Aleppo, for the Persian pilgrims were returning from Mecca in a very bad state of health, carrying with them the corpses of those of their companions who had died during the pilgrimage. The steps taken to prevent their entrance into the town not having proved successful, the caravan entered the town very early in the morning of the 16th August. That same evening two cases of black cholera were reported. From that day the epidemic made incessant progress; from the 15th to the 22nd August there were 28 deaths; from the 22nd to the 28th the number of victims rose to 1,200; from the 28th August to the 2nd September there were on an average 350 deaths every day, and the epidemic attained its greatest intensity. From the 2nd September, the average was 200 a day; on the 12th, the mortality fell to 50, and maintained itself at that figure till the 28th of September. On the 2nd of October the mortality increased, and the deaths again rose to 100 daily, and then descended progressively to 60, 15 and 12, the epidemic finally dying out by the 15th of November. The total amount of the mortality was 7,000, in the space of three months, or, in a population of ninety thousand souls, nearly $7\frac{3}{4}$ per cent. The ordinary population of Aleppo is 120,000, but about thirty thousand had emigrated on the appearance of the epidemic. The number of attacks is unknown.

JERUSALEM.—The epidemic appeared in the holy city on the 21st September, and carried off 601 victims in the space of twenty-two days, out of 1,258 verified attacks; the number of inhabitants in the town amounting to thirty thousand. The Israelites, living in unhealthy conditions, suffered more than the Mussulmans, who were much more numerous; the former lost 301 persons, the latter only 225. Jaffa, Hama, Homs, and almost every town in Syria, except Latakia, which remained exempt, were laid under heavy contribution by the epidemic.

DAMASCUS.—Cholera commenced at Damascus after the arrival of the fugitives from Beyrout who came to Damascus in search of shelter a good deal before the return of the Mecca caravan. "Cholera," says the sanitary physician of Damascus, "has been brought to us this year "by the pilgrims who took the Suez and Alexandria route, and not by "those who returned by the desert route." A great number of pilgrims from Beyrout, lodged in the Eguebeh quarter, as they are in the

habit of doing for the few days they stay at Damascus before returning to their homes. It was in this quarter that the first case showed itself, the victim being a Turkish woman, six months advanced in pregnancy, and who sank under the disease in eighteen hours. "It would be an error," adds the sanitary physician, "to believe that some cases of "diarrhœa and dysentery observed amongst the pilgrims of the caravan "were of a choleraic nature, for these diseases always exist among the "pilgrims and never transmit themselves to the population. The desert "purifies the caravan, and it always arrives at Damascus without propa-"gating cholera."

MESOPOTAMIA.—Cholera arrived at Bagdad from Mecca, or rather, to speak more precisely, it reached Imam-Ali and Kerbelah, by two distinct currents: 1*st*, by the Red Sea, Muscat, Bassora, the Tigris or the Euphrates; 2*nd*, by Alexandria, Beyrout, Aleppo and Diarbeker. Thus, the epidemic, leaving Mecca with the pilgrimage, followed two different routes to reach Kerbelah, another place of pilgrimage. At Bagdad it was known since the 17th June that the Persian pilgrims, divided into several columns, were following the two routes we have just indicated. On the 18th August the telegraph announced, by way of Bassora, that cholera had broken out at Muscat and Bender-Abbas. On the 4th September the first case of cholera which occurred at Bassora was reported. That was the commencement of the epidemic, which raged with violence till the latter part of October, carrying off 471 victims in less than 5,000 inhabitants, or nearly ten per cent.

To ascend from Bassora to Bagdad, cholera had two roads to follow: that of the Tigris and that of the Euphrates. The Tigris route is desert. The Bedouins who encamp on its banks retreat to a great distance from them directly cholera makes its appearance, and the epidemic dies out from want of aliment. This is what almost always happens in these parts. In this way some years ago, cholera, which had penetrated, by way of Mohammerah, among the Abou-Mahomeds of the South, died out among them. Cholera must then have ascended the Euphrates with the columns of the Persian pilgrims. It appeared in succession, winding about with the course of the river, at Kourna, Suk-el-Chuck, Samawat, Divanieh, Imam Ali, and Kerbelah, whence it passed to Hilla, and then to Bagdad. This was precisely the route of the pilgrims. At Samawat, it carried off numerous victims, but the number is unknown; at Divanieh it carried off twenty-two soldiers of the garrison and 125 inhabitants; at Imam Ali, three soldiers and 336 inhabitants; at Kerbelah, two soldiers and 1,478 inhabitants and pilgrims; at Hilla, four soldiers and 45 inhabitants; at Bagdad, from the 17th September to the 3rd December, 262 inhabitants. Cholera also declared itself at Imam-Moussa, a place of pilgrimage among the Persians, situated an hour's march to the south of Bagdad. The pilgrims, flying from Kerbelah, re-entered Persia by Haneguin without being obliged to undergo quarantine.

By the second, or Syrian route, the caravan of Persian pilgrims, which had infected Alleppo, divided itself into several columns, some

proceeding along the Euphrates, other along the Tigris. By these two ways, the pilgrims reached the same points, that is to say, Imam Ali and Kerbelah, carrying cholera with them, and spreading it everywhere in their passage. The epidemic caused ravages at Biredjik and Anah-Hit on the Euphrates, and the more so, in consequence of the country being much more inhabited, at Orfa, Diarbekir, and Mosul, as far as Bagdad and Kerbelah.

One of the routes followed by the pilgrims in returning to their homes in the north of Persia, after having performed their devotions at Kerbelah and Samara, is that of Kurdistan, by Suleimanieh. Cholera was thus imported into that town, although, however, it is impossible to demonstrate the connection with precision. Cholera, says the report of the sanitary physician at Suleimanieh, raged at Aleppo, then at Diarbekir and Mosul; in October it was at Kerkouk, not far from Samara, and twenty leagues from Suleimanieh. Two weeks afterwards it showed itself in this latter town. The first death, which was closely followed by a second, took place on the 31st October. We must go on, after this, to the 13th November to find new cases, and the epidemic smouldered till the 13th February, the date of the report. Its progress was effected by fits and starts; the first fresh outbreak was from the 13th to 20th November; the second from the 23rd to the 28th; the third from the 1st to the 29th December; the fourth from the 31st December to the 22nd January; then nine days passed without accidents; then the fifth from the 1st to the 13th February. The rapidity of death was extraordinary, especially among the foreigners who had come from Persia. The cold exercised no favorable influence; on the contrary it would seem that it lent greater force to each outbreak. The number of deaths, at an approximate estimate, amounted to 300 out of 600 attacks in a population of 10,000 souls. The barracks furnished 34 attacks, and seventeen deaths in an effective force of 900 soldiers. The disease spread in the villages in the neighbourhood of Suleimanieh.

SAMSOUN.—Fifty-six steamers arrived at Samsoun under foul (cholera) bills of health, all coming from Constantinople, and carrying 3,170 passengers and 1,960 sailors. From eight of these vessels, sick or dead men were landed. On the 31st July, the *Pilade*, Russian vessel, 82 passengers, four sick men. On the 3rd August the *Tamise*, French, 120 passengers, three sick, two corpses. On the 5th August the *Vassitay*, Turkish, 271 passengers, two sick. On the 6th August, the *Saltan*, Austrian, 117 passengers, three corpses. On the 7th August, the *Oleg*, Russian, 140 passengers, two sick. On the 9th August, the *Mersina*, French, 159 passengers, four sick, six corpses. On the 12th August, the *Touna*, Turkish, 148 passengers, one sick. On the 14th August, the *Ismith*, Turkish, 36 passengers, one sick. On the 17th August, the *Caire*, French, 29 passengers, four sick, one corpse. Total, from the 31st July to the 17th August, eighteen sick, twelve corpses. The quarantine, when no choleraic accidents had occurred, lasted for five days, and for ten in cases where cholera had shown itself either on board or in the lazaretto. The lazaretto of Samsoun consisted of

a barrack shed a quarter of a mile from the town and capable of containing a thousand men; a large hut, two miles out of town, and lastly, some houses a few yards from the Government house. The cholera hospital was quite isolated, a mile away from any dwelling. The greatest number of persons undergoing quarantine in the barrack at any one time was 307, so that there was no crowding, in the large hut 257, in the houses 271.

Amongst the persons undergoing quarantine, who arrived on board the *Vassitay*, on the 5th August, there were five cases of cholera; and one case among those who arrived with the *Pilade* on the 31st July. No attacks occurred among the persons employed in the lazaretto. All told there were twenty-four sick in the lazaretto, including the 18 who were landed, and twelve deaths, besides the corpses brought in by the steamers. With the exception of two unproven suppositious cases, the town of Samsoun was unaffected by any sort of choleraic accident whatever.

TREBIZOND.—Sixty-eight vessels, eighteen of which were sailing ships, entered the port of Trebizond under foul bills of health, sailors, 2,558, passengers, 5,073, total 7,611, in the space of two months. On the 25th July, a sick man was landed from the steamer *Junon*; three corpses from the *Tamise* on the 4th August; two from the *Vassitay* on the 6th; and one from the *Sultan* on the 7th. From the 25th July to the 28th August there were twenty-two patients in the lazaretto, two of whom only survived. The lazaretto of Trebizond not being large enough to contain all who were to undergo quarantine, a portion of them was sent to Ahtche-Kalé under tents. Seventeen of this batch died. Total number of deaths, inclusive of the six corpses landed, forty-five. The maximum number of persons undergoing quarantine in the lazaretto of the town at any one time amounted to six hundred, the result being overcrowding. This lazaretto, moreover, was close to the town. Amongst the persons employed in the lazaretto and in the encampment, there were no cases. After the arrival of the *Junon*, from which the first sick man had been landed at the lazaretto, one case of sporadic cholera was reported at Trebizond, and it was followed, from the beginning of August to the middle of September, by forty-five cases, twenty-eight of which were fatal, distributed through the town.

ERZEROUM.—The first case of cholera at Erzeroum was reported on the 22nd August, following on the arrival of crowds of laborers, Kurds and Armenians, sent away from the capital, where cholera was prevalent. They reached Erzeroum *viâ* Trebizond, infecting several villages on the road taken by them. They scattered themselves in the khans and bazars of Erzeroum, sowing the seeds of the disease all round them. The first reported case was that of one of the soldiers working at the fortifications of the town. Before that time no case of choleraic disease existed in the country. From the 22nd to the 31st August, fourteen cases, six of which ended fatally, were reported in the town, as well as among the laborers at the fortifications. In the month

of September, cholera spread and attained its greatest intensity: 343 attacks and 143 deaths; in the month of October there was a decrease, 160 attacks and 76 deaths; from the 1st to the 7th November, 4 attacks, one death; from the 7th to the 23rd, no cases; on the 23rd, 12 attacks and four deaths; then a few isolated cases; and finally, the end of the epidemic on the 12th December. Total number of attacks 518, deaths 224.

During this interval, 600 families of Tchetchens who had come from Russia and were bound for Diarbekir, contracted cholera and carried it to Mouche, a village 100 kilomètres from Erzeroum. Returning in the path by which they had proceeded, and begging for re-admission into Russia, they proceeded towards Kars, 106 kilomètres from Erzeroum, and carried cholera with them to that place also. The epidemic, however, did not acquire any great violence either at Mouche or at Kars, where it confined itself to a few sporadic cases.

SINOPE, BATOUM, and VARNA also received a great number of sailing vessels and steamers, containing hundreds of passengers. Some cases of cholera had occurred on board these ships in coming from Constantinople, where cholera was prevalent about the months of July and August; but the disease did not overstep the confines of the lazaretto, and the inhabitants of these towns were spared.

BOURGAS received, 186 sailing vessels, under foul bills of health, manned by 1,718 sailors, among whom were three cholera patients. As the quarantine lasted for only three clear days, one of the sailors died in town after being admitted to pratique. The lazaretto, which at first was situated near some dwellings in an unhealty locality, was replaced by huts built upon a raised site and completely isolated. The number of persons undergoing quarantine amounted to 1,096. On the 6th August, six cholera patients, all of whom died, were landed from the Turkish steamer *Malakoff*. Two health guards, who had attended upon the sick, were attacked by cholera; one of them died. In the town, with the exception of some cases of cholerine, there were no serious or fatal cases.

KUSTENDJE.—Ninety-five ships, twenty-eight of them steamers, arrived at Kustendje under foul bills of health, with 928 sailors and 580 passengers; none sick. During the quarantine, which lasted for three days, eleven cases were observed on board these ships. The passengers were landed, and, having been sent two miles away from town to perform their quarantine under tents, no cases were observed during this short space of time, but a keeper was attacked on the 4th August, and his son on the 5th. Both of them died.

During the month of July the public health in the town was not affected, but towards the end of the month a bilious diarrhœa was observed. On the 2nd August an employé in the lazaretto fell ill of cholera and sank; on the 4th a blacksmith, a young and a robust Englishman, was attacked, and recovered; on the 5th two fatal cases occurred, an Englishman and the clerk of the lazaretto. Cholera then spread throughout the town

and amongst the Bulgarian laborers, who went to the mountains, where they interred several of their dead, and afterwards quitted the country. It is calculated that in the town there were a hundred and twenty deaths in four thousand inhabitants in the space of a month.

SULINA.—Eight hundred and eighty-seven vessels arrived, carrying 365 passengers and 7,983 sailors, among whom there were reported thirty cases of cholera, which occurred either in the roadstead or before the arrival of the ships. The lazaretto, consisting of two buildings, comprising altogether eight rooms and some huts, received altogether five hundred and eighteen persons into quarantine. The maximum number of individuals shut up together at one time in the lazaretto amounted to 73, and there was no crowding. The quarantine lasted for five days for persons who had arrived on board of vessels in which no cases of cholera had occurred during the voyage, and for ten days for those who had arrived in ships in which cases of cholera had taken place. No cases of cholera occurred in the lazaretto, except indeed among the sailors of the Ottoman man-of-war *Esseri Jedid*. On the 30th and 31st of July five cases out of twelve terminated fatally. Many of the sailors who were landed, were already suffering from cholera on their entrance into the lazaretto. The others were attacked within twenty-four hours after their arrival. Nobody employed in the lazaretto was taken ill with cholera. In the town three keepers at the sanitary office, who were attacked, died. The first attack in the town took place on the 2nd August, and the disease caused great ravages till the 20th of the same month, augmenting and diminishing gradually. In a population of three thousand souls, reduced by flight to less than fifteen hundred and eighty, there were about three hundred and fifty attacks and three hundred deaths. The disease spread after the disembarkation of the sailors of the *Esseri Jedid*, which had come from Constantinople. At Saint George, a village situated at seven hours' march from Sulina, it appeared after the arrival of persons flying from Sulina, who had sought refuge there. At Eté, a village two hours' march distant only, no case occurred, the inhabitants declining to receive amongst themselves, or to have any communication with the persons who had fled from Sulina in this direction.

TOULTCHA, ROUSTCHOUK, VIDIN.—Ascending the Danube, cholera showed itself at Toultcha amongst the sailors who arrived on the 2nd August from Constantinople for the purpose of manning the men-of-war lying in the river. They performed quarantine on board the ships. Between the 4th and the 15th of August, fourteen cases occurred amongst them, and ten deaths.

After this, the disease attacked and carried off a merchant named Economopoulo, purveyor to the Turkish men-of-war, whose business placed him in constant communication with the military of the station. Another case occurred on board the Turkish gun-boat *Varna*, whose crew in the course of duty had had communication with their newly arrived comrades. The next victim was the muezzin, Hajji Mustafa, who was in communication with the marines. In this way the epidemic

having taken rise amongst the sailors, spread to Toultcha. On the 21st August, the deaths from cholera amounted to twelve. From the 10th of the same month to the 16th September, the number of deaths in a population of twenty thousand souls was estimated at two hundred. The importation of cholera into the country is attributed to the newly arrived military, amongst whom sickness and deaths had taken place in their passage from Constantinople to the Danube.

At ROUSTCHOUK the first cases were observed among the Bulgarian laborers whom we have just seen leave Kustendje after having lost a number of their comrades by cholera. The disease spread at first among their compatriots, the Bulgarians, and spread in succession to the Greek, Turkish, and Armenian quarters. It lasted for sixteen days, and carried off a hundred and thirty-one persons, having attacked three hundred and sixty in a population of twenty-two thousand, the amount of that of Roustchouk.

Advancing up the river, cholera showed itself at Vidin commencing with the town goal, in which the two first cases were observed: no communication existed with the outside world or with the lazaretto, which consisted of a hotel and tents pitched on the banks of the Danube, all quite close to the town. Two hundred and eighty-seven persons underwent quarantine, and the maximum number of individuals in the lazaretto at any one time was a hundred and four. The period of quarantine lasted for five days, when no cases had occurred on board during the voyage, and the days spent on the voyage were included in this period if a health officer had been on board: so that the quarantine was often reduced, or very nearly so, to zero. In this way, the occurrence of cases in the town, though none occurred in the lazaretto, is easily explained. In fact, the prison and the Jewish quarter fell a prey to the disease, and then the Mussulman quarter, each of them furnishing the largest contingent to the epidemic, which, however, was not so violent as it had been at Sulina. The number of deaths amounted to 110, including 38 of the soldiers of the garrison, out of three hundred cases and a population of twenty-five thousand.

From the banks of the Danube, cholera advanced into the interior, and slight epidemics were reported in several places in Bulgaria. Similarly, on the Salonica side, with regard to Macedonia, Philippopolis and Pasardjik furnished their contingent, as well as Seres and Florina, which latter place transmitted the disease, as we have observed above, to the town of Larissa. We cannot afford details concerning the extent and ravages of the epidemics circumscribed within these places, but it is certain that they followed every where subsequently to the invasion of those maritime towns we have already alluded to in the present report.

VALONA.—Among twenty-two ships coming from localities infected by cholera, the *Nil*, Austrian steamer, which left Constantinople on the 7th August, arrived at Valona on the 12th, having lost twelve passengers from cholera during the voyage. Four hundred and sixteen passengers were landed, five of them being sick, one of whom died the

next day. The passengers were placed on an island in separate groups, the sick being grouped apart under tents. They were made to undergo a quarantine of ten days; the sick recovered as well as many others who had diarrhœa. No new cases occurred either among the persons in quarantine or the employés; only on the day when they were admitted to pratique, a man named Kiriaco was taken with choleraic symptoms and succumbed in the course of a few hours. No communication had been permitted between the island on which the quarantine was being performed, and the town and the population remained uninfected.

Among the localities which were exempted from the epidemic, although ships from infected ports came to them, we must mention *Gallipoli*, situated between two such foci of the disease as Constantinople and the Dardanelles, and which at the same time received eighty-nine ships, mostly coasting vessels manned by four hundred and seventy-two sailors, and carrying a hundred and nine passengers. Echelle-Neuve, 16 ships, 112 sailors, 200 passengers. Chio, many ships, numbers of passengers, and some cholera patients, who performed their quarantine on an islet in the Spalmadore islands. Adalia, 184 ships, 1,688 sailors, 350 passengers. Allaya, 175 ships, 1,733 sailors, 2,217 passengers, maximum number in the lazaretto at any one time 214. Durazzo, 58 ships, 434 sailors, 50 passengers. The greater number came from Constantinople, Smyrna, and Alexandria, places essentially compromised, but no cases of choleraic disease occurred on board either on arrival or during the voyage *(information extracted from the records of the Turkish Sanitary Administration.)*

Odessa.—This town felt the first attacks of the epidemic which was prevailing at Constantinople towards the middle of July. From the 14th to the 17th of this month, four cases of sporadic cholera were observed here, one of them terminating in death. It was not till between the 11th and the 16th that fresh germs of the disease were imported by two ships from Constantinople. The *Emilia-Luisa*, under the Austrian flag, which had had a death from cholera *en route*, landed a sailor suffering from the disease at the lazaretto. The Italian ship *Concentino* brought to the lazaretto four sick men, two of whom died on the 14th of August. The disease spread from the lazaretto to the town, and its development was observed with great exactness. On the 17th August, Gouline, a custom-house agent, in the service of the lazaretto, fell ill. Taken in the first instance to his home near Moldovanka, and to the town hospital the next day, he expired an hour after admission. His wife, his son, and a servant were also attacked, the latter died. On the third of September a workman named Dorfman, in the lazaretto was taken ill; he also was carried to his lodging in the Jewish quarter. His comrade, who attended upon him, fell ill, likewise the wife of the porter of the neighbouring house, then the husband himself, and then their daughter. Of all these, Dorfman was the sole survivor. On the fourth of September, a workman named Bochinski, whilst going from the lazaretto to his home, was seized with cholera, and succumbed to the disease the next day. His two children were attacked the same day, and,

two days afterwards, his wife, who died the day after the attack. Thus the disease, imported into the lazaretto of Odessa by the two ships above mentioned, spread to the quarantine port, thence to the quarter of the Moldovanka, to the town hospital, and in succession to Peresip, where a cholera hospital had been established. It must be pointed out distinctly that the Moldovanka, the town hospital, and the faubourg of Peresip are distant from each other, and are situated in opposite directions. Moldovanka had sixty-nine cases; the town hospital eighteen, three of these being hospital attendants; the faubourg of Peresip twenty-nine, six of them being infirmarians, or hospital servants. Besides these, cases were observed scattered about in the town and the district, in the lazaretto and on board the ships. Altogether, from the 16th of August, the date on which the epidemic commenced, to the 7th of October, the date on which the last cholera case occurred, there were 236 cases and 109 deaths in a population of 118,000 souls.

Almost at the same time cholera showed itself in Podolia, imported into the village of Borchi by German workmen who had stopped at Galatz on the 4th of August, at which place the epidemic was raging there. A child who was suffering from diarrhœa, died on the 10th August, and was followed by its mother, and two other children. The disease spread in the village and carried off thirty-three victims out of five hundred and fifty-eight inhabitants. The Germans lost eight of their number. Thence the disease passed to Gavinosa, another village, in which there were twenty-two deaths among four hundred and forty-four inhabitants. On the 20th of September it declared itself at Bogopol, and lasted till the 15th October. Among 2,275 inhabitants, 202 were attacked by the epidemic, and 65 died. On the 1st of October the disease was at Balta; out of 2,200 Jewish inhabitants 416 were attacked, and 147 died. It next appeared in the districts of Jampol, Mohilev, Olgapol, Vinitzi, and Litinsk, where it carried off some victims. From the 10th of August to the 27th of November, there were in the Government of Podolia, 1,361 persons suffering from cholera and 426 deaths. At Kertch, from the 27th of August to the 8th of November, 82 attacks and 41 deaths. At Berditchev, from the 6th of October to the 26th of November, 2,898 cases, 573 of which ended in death. From the 6th of October to the 26th of November, the Government of Kiev furnished 3,243 cases of cholera and 588 deaths. From the 13th of October to the 5th of December, in the Government of Kherson, there were 56 cases and 24 deaths. From the 24th October to the 27th November at Taganrog there were 625 cases and 175 victims. At Zitomir, from the 27th October to the 15th November, 644 attacks and 225 deaths. Some cases of cholera occurred during the month of November in several districts of the Governments of Volhynia, Kovno, Tver, and Voronega, without spreading to any extent. There was also one sporadic case at Vilna and another at Saint Petersburg (*Communication by Dr. Bykow*).

There is one case deserving of mention in connection with the epidemic at Odessa. The wife of a German workman left Odessa on

the 16th August for Altenburg, with her child, twenty-one months old, suffering from diarrhœa. On the 24th, after a journey of nine days, she arrived at her father's house. On the 27th, the child's diarrhœa having become considerably aggravated, the mother called in Dr. Geinitz. The mother was in perfect health on that day. At 9 o'clock, on the evening of that same day she fell ill of cholera and sank under the attack on the morning of the 29th. At 8 o'clock on the evening of the same day, the 29th, her sister-in-law, who lived in the same house, was attacked in her turn, and died on the 30th. The house in which these two women died became the primary focus of infection, whence the disease spread throughout the town. The family of a workman, who had died at Altenburg on the 13th of September, imported the disease into Werdau. The dwelling occupied by this family became the starting point of an epidemic which carried off two per cent. of the population of the town. This fact, which is reported by Dr. Pettenkofer, is most conclusive with respect to the importation of cholera.

GREECE adopted and maintained a very severe quarantine system. She refused admission into her ports to all vessels having cholera patients on board, with the exception of the isles of Delos and Skiathos, where they were admitted to quarantine. Those vessels which came from contaminated localities but which were in less unfavorable conditions by reason of their having no sick on board, were authorized to perform quarantine in the lazaretto ports of Salamin and Corfu. The number of those who underwent quarantine in the different ports amounted to 1,500: that of the passengers and crews to 26,000, including amongst these 2,721 travellers who arrived overland and whose quarantine was accomplished in four lazarettos situated on the frontier. Among the 1,500 vessels, 334, carrying 3,644 sailors and 2,854 passengers, total 6,498 persons underwent their quarantine at Delos, and twenty-six vessels, with 218, sailors and 913 passengers, 1,131 persons altogether, at Skiathos. Twelve ships arrived with cholera patients on board, one from Smyrna, nine from Constantinople, one from Alexandria, and one from Port Said.

The *Saint Nicolas* arrived in thirty-six hours from Smyrna on the 18th of July with seven sailors and a hundred and thirty-six passengers, and landed at the lazaretto fourteen corpses and twenty-two sick. In four days the number of sick increased considerably and forty persons died. Thus, fifty-four deaths were counted among 143 persons, *viz.*, fourteen on board the ship and forty in the lazaretto. The *Alemana*, which arrived from Constantinople on the 5th of August with forty passengers and fourteen sailors, lost three passengers *en route*, and landed three sick men who recovered. These two ships performed their quarantine at Delos. The following underwent quarantine at Zoungria (island of Skiathos). A brig commanded by Captain G. Sarri, which arrived on the 27th July from Port Said, with twelve sailors and ninety-two passengers, having had two deaths during the voyage and several sick. In the lazaretto the number of sick amounted to fifty-seven, out of whom there were forty-four deaths, two being health

guards who had embarked at Syra. A gun-boat commanded by Captain D. Choredites, which arrived from Constantinople on the 28th July with fifteen sailors and forty-four passengers, having had two deaths and four cases of sickness during the voyage; the number of sick amounted in a few days to twenty-two, of whom six died in the lazaretto. The total number of cases furnished by the twelve ships abovementioned amounted to 161, 99 of which were followed by death. The quarantine in Greece lasted, as a rule, for eleven full days for choleraic arrivals, and five days for suspicious arrivals the time being reckoned, in either case, from the day of survey on arrival, the time spent on the voyage never being taken into consideration. Greece was saved from invasion by the scourge, and this result is attributed to the stringency of her quarantine system. (*Extracted from an official communication by Dr. Maccas*).

Amongst the places which escaped falling a prey to cholera by refusing all access to choleraic arrivals, we must notice Sicily, which remained uninfected notwithstanding the vicinity of the island to the foci in the Italian mainland on the other side of the Straits. We must also mention Samos, in the Turkish Archipelago, which was saved by the adoption of the same system, although the island was surrounded by choleraic foci.

At TRIESTE cholera did not effect great ravages. The three first cases, observed on the 28th of September, were followed by two others on the 14th and 15th of November, in the village of Prosecco, situated at a distance of 8,000 mètres from the town. On the 29th a case occurred in the faubourg Guardiella. Thence, the disease advanced into the town, from east to west, proceeding by isolated cases, except in three houses, where several cases were reported under the same roof. From the 28th of September to the 19th of November, eighty-three sick and sixty deaths were reported. The disease also spread to the village of Optchina (five cases), and successively to Muggia, a small town two hours' journey from Trieste, where it prevailed from the 24th of October to the 15th of November, with average strength. This place was inhabited by a great many washerwomen who washed the linen of the citizens of Trieste.

Although the first cases of cholera were observed only on the 28th of September, there had been, nevertheless, some cases of diarrhœa and even of rather distinctly marked cholerine, though none were fatal, during the month of July; but of these cases there was no trace left during the months of August and September till the 20th of the latter month, excepting the cases of diarrhœa, which hung on. Now, the question is asked, what can have been the origin of these cases of diarrhœa and cholerine, and, lastly, of the Trieste cholera? Some people have accused three journeymen lapidaries of having brought it from Ancona in the beginning of September. Others, with more reason, attribute its importation to the refugees from Alexandria, who, as soon as the epidemic broke out in that town, fled in great numbers to Trieste, where they stopped. Cases of cholerine and diarrhœa,

therefore, had existed in Trieste since the month of July. Are we not authorised, after that, to connect the choleraic phenomena at Trieste with the emigration from Egypt in the month of June? We think so, but we are not in possession of proof sufficient to enable us to assert it positively.

We give here some official information, which, as well as the information already given, was communicated to us by Dr. Polak, concerning the quarantine of Trieste. In principle, Austria admits of no quarantine against cholera; but yet, on account of the violence of the epidemic in Egypt at Constantinople, she had established a regulation of seven days of observation for arrivals from suspected countries, which observation was reduced to 48 hours if the voyage of the vessel had lasted for fourteen days without the occurrence of any cases. If, on the contrary, the bill of health was foul and there had been accidents at sea, the ships were subjected to a rigorous quarantine, like that for arrivals from places infected with yellow fever. The number of persons placed under quarantine of observation at Trieste from the 18th June 1865 to the 7th February 1866 amounted to 11,108. During the quarantine of observation, a woman named Pucinotti, who had arrived from Alexandria on the 4th of August, fell ill of cholera on the 8th. A man named Anderson, who had arrived from Ancona on the 24th of August, after a day's voyage, fell ill some hours after his arrival. And again between the 7th of August and the 20th of October, three fatal cases occurred on board three of the ships which had come from places infected with cholera and which were placed in quarantine.

ITALY had been exempt from cholera for 10 years, when, on the 7th of July, the first case was reported at Ancona after the arrival of the steamer *Principe Carignano* from Alexandria *(Communication from Professor Bosi)*. According to the information transmitted by the French Government to the Delegates representing it at the Conference, no sporadic cases whatever had been remarked previously, none of the persons in the lazaretto had been attacked by cholera, and it would seem that the disease was imported into the town by means of effects belonging to sick persons who had come from Alexandria. In fact, the first case is attributed to a washerwoman who had taken away from the lazaretto linen belonging to passengers from Egypt. Cholera immediately spread in every quarter. Having commenced on the 7th July, it lasted 74 days and attained its greatest intensity on the 6th of August, after which it remained stationary till the 10th, and then diminished progressively, ceasing altogether on the 20th of September. In a population of 46,000 inhabitants, reduced to 20,000 by emigration, there were counted 3,763 attacks and 2,108 deaths. The epidemic spread in succession throughout the 21 communes of the province of Ancona, following in almost every one of them the steps of those who were flying from it. The quarantine imposed upon arrivals from Egypt lasted for seven days without purification either of the ships, luggage, or merchandise.

The epidemic, however, did not spread in Upper Italy (*Annali Universali di Medicina, Febbrajo* 1866), which is attributed to measures having been taken to stifle the primary germs of the disease. Thus the first case imported into Milan was followed by no consequences. A woman named Conforti, from Ancona, after a short quarantine, fell ill travelling on the railway and died at Pistoja; similar measures here, and similar results. The same thing happened again at Ravenna. At Bologna, the germ was imported on several occasions, but receded before measures applied with tenacity and perseverance by the sanitary authorities. But it was not so elsewhere. At San Severo, one of the railway stations between Ancona and Foggia, a town containing eighteen thousand inhabitants and in direct communication with the principal focus of cholera, the disease showed itself with fury during the course of the month of August. It then invaded, following the line of rail, all the eastern side of Lower Italy from Pescara to Otranto. Next comes the epidemic in Naples, but in the absence of authentic documents, we are not acquainted with the details.

As for Marseilles, the first ship by which cholera patients were brought to the port was the *Stella*, which left Alexandria on the 1st of June with sixty-seven pilgrims from Mecca. Eight days after her departure on the 9th of June, two men who had died of cholera were thrown overboard. On the 11th of June, the remaining sixty-five were landed, including one Benkaddour, who succumbed as soon as landed. (*Archives générales de la Médicine*). Here we have official information, laid before us by Dr. Fauvel. The number of ships that arrived at Marseilles from the 15th of June to the 10th of December, under foul (cholera) bills of health, amounted to 390, 143 of which were steamers and 247 sailing vessels. They were manned by 10,503 sailors, and carried 5,538 passengers, total 16,041 persons. Twelve of the steamers arrived at Marseilles with cholera on board. On the *Stella* there were two deaths, on the *Said* two, the *Terifu* one, the *Vincent* one, the *Copernic* one, the *Cella* one, the *Asie* two, the *Said* two, the *Marie Louise* three, the *Brésil* one, the *Oronte* one, the *Bysantin* one. Moreover, six cholera patients, two suffering from cholerine, eight from diarrhœa, and two from dysentery were admitted into the lazaretto and treated there. Two of the cholera patients came from a war despatch-boat, the *Dain*.

From Marseilles, the epidemic spread to Toulon, Arles, and Aix, where it caused great desolation. It then reached Paris, which was every day receiving by train crowds of travellers from the South.

SPAIN, as we are about to see, was cruelly ravaged by the epidemic of 1865, which made its first appearance in the country at Valencia. The first case of cholera reported in that town took place on the 8th of July, the public health having been till then generally good. The disease was imported there by one Honoré Teissier, a French merchant, who had come from Alexandria *viâ* Marseilles. He was the first who was attacked, and he died the same day; and we are all the more justified in supposing that cholera was imported by him or his baggage,

that the victims who were carried off in succession all inhabited the same house. The march of the epidemic was irregular. From the 8th to the 30th of July it carried off from 20 to 25 victims; from the 1st to the 20th August, 50, 70, and 96 daily; from the 21st to the 30th, it went down to 45 to go up again as high as 100. On the 8th, 9th, and 10th of September, it carried off 600 victims; from the 11th to the 15th, from 45 to 70 daily. After this date the violence of the disease diminished, and it disappeared altogether on the 22nd October. Altogether, in the population of Valencia, amounting to 107,000, but 40,000 of whom had emigrated at this time, the number of attacks amounted to 11,000, and the number of deaths to 5,100. From Valencia the disease spread to almost all the surrounding towns and villages in all directions. People arriving from infected places were subjected, after the invasion of cholera, to a quarantine of five days; all goods and travellers' luggage as well were properly aired. Valencia having no lazaretto, one was improvised where the quarantine regulations were strictly observed.

PALMA.—The invasion of Palma by cholera was effected, it is believed, by means of a case of wool smuggled in from a cholera district by a Spanish ship. The persons by whom this case was opened were the first who were attacked, and then the inhabitants and neighbours of the house in which the case was kept. The first case of cholera occurred on the 19th of August. The disease spread very rapidly. The maximum number of cases occurred from the 12th to the 23rd of September; then came the period of decrease, and then the cessation of the disease on the 15th of November. The number of attacks amounted to 4,268, that of the deaths to 2,892, in a population of 50,000 souls, reduced by emigration to 10,000. The disease spread to all the localities in the environs of the town, in spite of the establishment of sanitary cordons.

CARTHAGENA and MURCIA.—It is supposed that cholera was imported from Valencia into Carthagena and thence into Murcia, then into Alcantarilla and Cieza by railway. The epidemic displayed itself at first under the form of cholerine. On the 10th of September the disease became serious; from the 15th to the 25th it attained its greatest strength. It diminished on the 1st of October, but meanwhile it broke out at Murcia on the 20th of September, alternately decreasing and increasing, and it did not definitively disappear till the 15th of November. The fugitives who returned were especially singled out as victims. The number of deaths at Carthagena amounted to 900, the population being 25,000, 17,000 of whom had emigrated. At Murcia there were 879 deaths in a population of 37,000, reduced by emigration to 12 or 15,000. It was observed that the disease spread from house to house and almost from family to family. The principal hospital of Carthagena, situated in the centre of the town, was closed against cholera patients, who were sent to a special establishment, so that no cases took place in the hospital.

SEVILLE.—The invasion of this town by cholera dates from the 6th of September, the sanitary state of affairs having previously been very satisfactory. It is asserted that the crew of a steamer plying regularly

between Valencia and Marseilles, on their arrival at Seville, brought some linen to a washerwoman who was attacked on the same day and succumbed immediately. The disease spread rapidly, carrying off numerous victims, but it did not attain its greatest intensity till from the 12th to the 30th of October. It ceased on the 30th of November. In a population of 120 or 130,000 inhabitants, 4,330 cases and 2,674 deaths were reported. The number of those who emigrated is estimated at 25,000. The disease, which had at first invaded the suburbs, was afterwards brought into the town by families seeking refuge there; and in the same way it spread to 19 villages grouped around Seville.

BARCELONA.—The general health of the people at Barcelona had been good, and was so on the arrival of the English squadron from Malta, where cholera then prevailed. The importation of the disease consequently is attributed to it. Others assume that it may have been communicated to the town in consequence of the frequent communication between Valencia and Marseilles. The cases reported between the 22nd of July and the 10th August were only sporadic, and the first persons attacked belonged to the well-to-do class. The disease, which remained stationary during the whole of August, attained its greatest intensity towards the middle of September, and it then commenced to decrease. After the 15th of October, the cases became rarer, and it finally ceased towards the 15th of November. The number of deaths, according to official records, amounted to 1,799. The population of Barcelona, which amounts to 190,298, had been reduced by more than a half by emigration. Most of the villages in the neighbourhood of Barcelona were attacked by the scourge.

The quarantine for choleraic arrivals lasted from three to five days in those towns of Spain, where temporary lazarettos had been improvised, but a strict quarantine was observed according to the Spanish law, in the ports of Vigo, Cadiz, and Mahon, which were provided with suitable establishments. The proper measures, however, were not strictly observed everywhere.

We are indebted for these particulars regarding Spain to the French Delegates, who received them from their Government. The Spanish Delegates confirmed them generally, and added others from which we make the following extracts:—

MADRID also suffered from cholera, which made its appearance there on the 15th of August and ceased on the 29th of November, carrying off 2,869 victims (1,323 men and 1,546 women). In the general hospital there were 520 deaths (297 men and 223 women). It is believed that cholera was imported into the town from Valencia.

The disease also spread to the province of Navarre, making itself remarkable by the absence of cramps, and by this peculiarity that it raged at first especially among children and old people. It appeared also at Avila, into which place it is believed it was imported by means of the uniform of a soldier, which had come from Madrid, where cholera prevailed. There were however not more than twelve cases and four deaths as the disease did not spread to any other part of the province. In

the town of Santa-Ollala, a province of Huelva, the disease was imported from Seville and showed some remarkable circumstances in its transmission; the first person attacked was one of the notabilities of the town, who was visited by several persons the day he fell ill. On the following day eighteen of these visitors fell ill, the persons attacked being, all of them, the most intimate friends of the patient, whose hand they had shaken.

ALICANTE.—It has been proved that cholera was imported into Alicante by means of some bales of merchandise smuggled in from Marseilles. The disease broke out first in the house to which the contraband goods had been carried for retail; thence it spread with great swiftness to the neighbouring houses, and then to the remainder of the quarter which was called the fishermen's quarter, and finally to the centre of the town. Not more than 517 victims were carried off.

Spain is divided into forty-nine provinces or departments, thirty-one of which were invaded. The lowlands intersected with rivers, and the unhealthiest towns, were the most ill-treated as compared with places situated on hills or highlands or declivities. At Ciudad-Real, the upper part of the town which cut off all communication with the lower part when the latter was attacked by cholera, remained uninfected.

PORTUGAL.—About the month of July, cholera was prevalent in Spain, and it advanced gradually towards the frontiers of Portugal, which country had hitherto been exempt from the disease. On the 1st of October it appeared at Elvas, a fortified town in Alemtejo, and there carried off fifty victims. The disease also showed itself on the northern frontier, at Freixo da Espada, and at Cintra without however causing great ravages. But here we have a case of importation which deserves mention. A woman and her servant left Elvas, while cholera existed there, and went to Porto where cholera did not exist. Both of them fell ill and died. A government employé, living on the first floor of the same house was attacked and died. Two children, whose parents lodged on the ground floor of the house, were also attacked, but recovered. M. de Soveral, the Portuguese Delegate to the Conference, witnessed these facts, which occurred during the international exhibition, which was held that year at Porto. Every thing was done to stifle the evil in the commencement: the sick were strictly isolated, their effects destroyed by fire, and all the usual means were employed for the sanitation of dwellings. The evil was thus stopped. Nevertheless a choleraic influence showed itself in the country and notably at Lisbon, which influence was characterised by vomiting and diarrhœa, sometimes simple, and sometimes attended with cramps, coldness, &c., but this constituted the whole of the epidemic manifestation and no mortality followed (*Historical review of cholera and yellow fever in Portugal*, 1833-65, *by Dr. Gomez*).

MALTA.—On the 31st of May the English steamer *Ephesus* arrived from Alexandria with two hundred and thirty-five pilgrims, sixty-one of whom bound for Tunis and remained at Malta till the next day. The captain declared that three hajjis had died during the passage, one

of gangrene, another of constipation, and the third of old age and exhaustion, and that their corpses had been thrown overboard. The ship was admitted to pratique. Between the 1st and the 9th of June, seven steamers all from Alexandria brought two hundred and thirty-seven passengers to Malta, the greater number being hajjis. On the 10th, the *Olympus* arrived from Alexandria after a passage of four days, one of her crew suffering from an intestinal disorder. Between the 12th and the 14th five more steamers arrived with passengers on board. On the 14th, the Government having received a telegram announcing that cholera existed in Egypt, arrivals from Alexandria were subjected to a quarantine of seven days, reckoning from the day of arrival at Malta. On the 14th, the *Memnon* arrived, after a passage of four days, with twenty-two passengers, eleven hajjis, one death having occurred from bowel-complaint. Between the 14th and the 19th, the *Caire*, the *Nyanza*; the *Marie-Antoinette*, the *Assyrien*, and the *Rhône*, arrived with a total of two hundred and forty-eight passengers, thirty-seven of whom were Mussulman pilgrims. The captain of the *Rhône* declared that a passenger and a fireman had died at sea of cholera. On the 20th of June, the number of passengers in quarantine amounted to two hundred and fifty-four, with the addition of thirty-four persons who were in communication with them.

The same day (the 20th of June) the first case of cholera occurred in the building called the plague hospital, which is situated, as the crow flies, six hundred and sixty feet from the lazaretto where the persons in quarantine were, the building being occupied by a detachment of royal artillery; the person attacked was Amelia Tom,* about nine or ten years of age, daughter of an artilleryman. She was taken ill on the morning of the 20th, and died on the 21st. The second case also occurred in the plague hospital: Grace Monger,* wife of an artilleryman, twenty-eight years of age, fell ill on the 22nd, and sank on the 23rd. The third case (in the same hospital) was that of Charlotte, thirty-three years of age, the mother of Amelia Tom,* who died on the 21st; the mother was attacked on the 23rd, and died on the 27th. The fourth case in the same hospital was an artilleryman named Tovester,* twenty-nine years of age; he was taken ill on the 28th, and recovered. Fifth case, Giuseppe Borg, attacked during the night of the 27th-28th at Casal-Attard; he died on the afternoon of the 29th. The doctor with view not to alarm the population, declared this to be a case of gastro-enteritis. The man in question had been employed in whitewashing some rooms in the plague hospital, where the previous cases of cholera had occurred. The sixth case also occurred in the plague hospital, the victim being Henry George Marshall, say six years and a half old, the son of an artilleryman; he was attacked on the morning of the 29th of June, and died in the afternoon of the 30th.

On the 30th June, the authorities removed the detachment of artillery and that of the 4th regiment from the plague hospital; the former was sent into barracks at *Salvatori Counter Guard, Floriana;*

* These names are so printed in the French report: they appear to be curious transformations.

the second at *Notre Dame* and *St. Francis' Ravelins, Floriana.* The seventh, eighth, ninth, tenth, and eleventh cases occurred on the 1st of July at *Salvatori Counter Guard Floriana,* to which the detachment previously lodged in the plague hospital had been sent: five women, wives of artillerymen were attacked, one of them only dying. The twelfth case took place on the 3rd of July, in the same locality again; the victim, the wife of an artilleryman, dying on the 8th. The same day a man named Emanuel Schembri was attacked at Valetta, in the *Strada Vescovo;* he died in less than 24 hours. On the 6th of July four cases occurred, three in the artillery, and one in the 9th regiment stationed in Fort *Ricasoli.* On the 7th of July, another case occurred among the artillerymen. On the 8th, one at Valetta, and another at the Floriana hospital. On the 9th, two cases in the artillery; on the 10th, two cases in the population of Valetta, and one at Cospicua. The attacks thus gradually proceeded among the civil and military population until the 11th of November. *Casal Musta* remained uninfected till the 21st of July; on which day a man named Vincenzo Gatt, who had been suffering from diarrhœa and had come from Misida, where the epidemic was raging, fell ill; he died the next day. The same day another case was observed in the Casal Musta.

Gozzo.—This little island, situated five leagues to the north-west of Malta, has no direct communication with other places. In every epidemic, cholera has not shown itself there until long after taking root in Malta. On the present occasion it remained uninfected until the 21st of July, on which day a sailor named Michele Cilia, 22 years of age, arrived from Malta and went to lodge in his sister's house at Casal Keuchia. He was suffering from acute diarrhœa, and during the night was taken with vomiting and cramps. He recovered; but on the 24th of July four cases of cholera occurred at Keuchia: the two sisters of Michele Cilia, in the same house, Catherine Attard, a kinswoman of the Cilia family, whom she frequently visited, and Maria Buttigig, of the same Casal. Two, out of these four cases, ended fatally. On the 25th July, there were two other attacks: Maria Cassar, a neighbour of the Cilias, whom she visited every day, died the day after being taken ill; and Ursula Farrugia, who also was a frequent visitor of the Cilias. On the 25th July, Catherine Soliba, who lived close by the Cilias, was attacked and recovered. From the 27th July to the 1st of August, eight other cases showed themselves in the Casal Keuchia. On the 2nd August, cholera appeared at Robato and remained there till the 24th of October.

Civil population of Malta	...	117,966	...	Attacks	2,360	...	Deaths	1,479
Military " "	...	6,062	...	"	203	...	"	145
Civil " Gozzo	...	15,459	...	"	545	...	"	253
Total	...	139,487			3,108			1,877

(M. Zimelli and Dr. Ghio's Report to the Governor-General of Malta, communicated by the British Delegates).

Gibraltar.—The following facts are extracted from a report addressed to Sir Richard Airey, the governor of the fortress, containing

the result of an enquiry held by Inspector-General Rutherford, than which nothing could be more complete. These facts, therefore, are of the very greatest importance in the question with which we are occupied. We have extracted from the report the circumstances relating to the importation of cholera. Gibraltar enjoyed better health than usual, both as regards the inhabitants as well as the garrison. On the 10th of July, the 2nd battalion of the 22nd regiment arrived from Malta in perfect health on the steam transport *Orontes*. They were encamped in a very healthy spot, named North Front, between the north of the rock and Spanish territory. Previous to its departure from Malta, the regiment had been exempt from everything approaching to cholera. On the 5th and 6th of July, the day of embarkation, cholera was raging at Malta in an outer fort, close to the place of embarkation.

From the 10th of July, the date of its arrival at Gibraltar, until the evening of the 18th, with the exception of a single slight case of diarrhœa, the corps enjoyed good health. At nine o'clock that evening a soldier named Bird fell ill of cholera, and died between 10 and 11 the following morning. The camp was immediately struck. The wing to which the deceased had belonged was embarked on board the *Star of India*, which put to sea in 48 hours, everybody being in good health. The remainder of the regiment was sent to a great distance from the first camp, the transport which had brought them to Gibraltar not being at hand to receive the men. Their health continued good until the 31st, when a man named Davis was affected by vomiting, diarrhœa, and other choleraic symptoms. He died the same evening. That evening, a woman in the detachment was attacked, and died the next day, the 31st of August. The transport *Davenport* having arrived the day before from England, this portion of the regiment was also embarked, everybody being apparently in good health, and the vessel left for her destination. It is believed that both transports arrived at the Mauritius without accidents.

On the 3rd of August, a day after the departure of the 22nd regiment, two cases of cholera occurred, one, being that of a corporal of the 15th regiment, who was employed in the cemetery, and the other that of a child of four years of age. The latter died in 15 hours; the former in 48. Another child of the same family, six years old, was also attacked, but recovered. This family lived in an isolated house, outside the fortress, and a quarter of a mile south-east of the spot that had been occupied by the 22nd regiment. On the 9th August, the wife of a sapper, lodging in the same locality, was attacked and died in 58 hours. During the morning of the 10th, a private of the 15th regiment, living in the casemated barrack, was attacked and died within the short space of eight hours. During the afternoon and night of the same day, there were seven cases observed, two of them very serious, in the same regiment stationed in the large casemated barrack, which is within the fortress and about 500 yards distant from the place where the previous cases had occurred. One of the soldiers died in 37 hours.

Until the morning of the 11th of August, the disease remained amongst the soldiery. On the 11th of August, the child of a poor man living in a boat moored in the port at a spot 250 yards west of the casemated barrack died after seven hours' illness. On the 14th, a child four years old, living in a district one mile and a half south of the place beforementioned, was also attacked; he recovered. On the 15th of August, a sapper belonging to a small detachment, and living in a little isolated house to the north-west, died after nine hours' sickness. All these houses were emptied of their inhabitants, though apparently the places in their neighbourhoods were not unhealthy. On the 18th, another private of the 15th regiment, living in another room in the casemated barrack, was attacked and died the following day. On the 19th the disease showed itself in the *town range barracks*, an unhealthy locality situated in the centre of the town. A sapper was attacked there and was carried off in some hours. On the 23rd, the disease attacked a soldier of the 23rd regiment, stationed in the south barracks, built on high ground, a mile away from the town. He sank after a short illness. Up to this date six cases, two of which had ended fatally, had occurred in town, including the two children mentioned above, all living in different places, distant from each other, within the town as well as without it. On the 21st, a sudden increase of sickness was observed in town: seven attacks, two deaths.

Here the report notices a circumstance deserving of attention. The 1st battalion of the 9th regiment, which was a part of the garrison during the first period of the epidemic, had been lodged in unhealthy barracks; nevertheless, it kept in remarkably good health. It had not more than six men sick in hospital when it received orders to embark in two divisions for the Cape of Good Hope, on board the transports *Windsor Castle* and *Renown*, which, on the 16th and 17th of August, had landed the 78th highlanders. The left wing embarked on the first mentioned transport on the 19th, and reached its destination in perfect health. The right wing embarked on board the *Renown*, a large, well-ventilated vessel, moored at the new quay where the other transports were stationed. On the following day, the 22nd, a very grave case of cholera, ending in death in a few hours, occurred, the person attacked being a person named Doyle, who had come from the town range barracks. The vessel was towed out into the stream, and, no other case having occurred on board, put to sea in thirty hours. Then a fact of the greatest importance with regard to the propagation of the disease by communication between men occurred. On the 5th of September, after having been thirteen days at sea, and on the further day after the occurrence of the first case on board, cholera showed itself in a very malignant form, carrying off nine men, a woman, several children, as well as the ship's surgeon. The disease lasted for fourteen days, ceasing on the 19th of September. On the 20th of August the epidemic began to extend in town. On the 13th of September it reached its greatest height, 53 attacks, 22 deaths. From this date to the 26th the average daily number of attacks was 35, and of deaths 15.

On the 28th of September, a considerable diminution took place, which continued, with some fluctuations, till the 12th of October, when the decline of the epidemic became more distinctly marked. The last case was observed on the 27th of October. Some attacks occurred among the attendants in the hospitals. In the prisons, there were from 50 to 60 deaths in a prison population of 700. Among the civil population of 15,000 souls there were 902 attacks, and 477 deaths. Among 5,978 soldiers there were 163 attacks and 106 deaths. Total number of deaths 643, from the 18th July to the 27th October 1865. (*Communicated by the British Delegates*).

Cholera in the port of NEW YORK.—The British ship *Atlanta* left London on the 10th of October with a cargo of merchandise and forty passengers. The sanitary condition of London at the time was perfect. Arriving at Havre on the 11th, where she only remained a day, she took on board 564 new passengers, mostly Swiss, who had all passed through Paris, where, with some exceptions, they had remained, some for a few hours, others for several days, at the time cholera was raging intensely. Two German families, who were included among these passengers, had stayed for one day in the capital at the hotel *Ville de New York*, and five days at Havre, at two hotels, called *Veissen-Lamm* and *Hultgarder-Hof*. Some emigrants, who had arrived at these hotels some days previously, had fallen suddenly ill and had been sent to hospital by their consuls.

This ship left on the 12th, and there was a death from cholera on board the next day, the victim being a little child belonging to the family that had put up at the *Veissen-Lamm*. Five more deaths followed on the 14th, 16th, 18th, 19th, and 22nd, in the family which had lived in the *Hultgarder-Hof* hotel. On the 22nd, one of their friends who had lodged on the second floor of the same hotel was attacked, and succumbed on the 24th. On the 28th, three emigrants from London who had lived on the third floor were attacked, but recovered.

On the arrival of the *Atlanta*, the surgeon made a declaration that 60 cases of cholera and 15 deaths had taken place during the voyage; two deaths occurred in the port, and of the forty-two persons sent to the marine hospital from the 6th to the 19th of November, six died, making a total of 102 cases and 23 deaths.

As no arrangements had been made at New York previous to the arrival of the *Atlanta* to subject her to a rigorous quarantine, she was immediately sent to the lower bay and isolated there; when the hospital was got ready, and ten days of quarantine had elapsed after the occurrence of the last case, all the sick without distinction were conveyed to it; all the passengers' baggage was opened and aired, the linen washed, and the beds and all the other articles fumigated; a state-ship was assigned to guard the vessel and enforce the strict execution of the quarantine measures ordered by the sanitary authorities. The town of New York was saved from the epidemic.

Two other importations of cholera into the port of New York were announced by the *Evening Post* of the 25th of April. Though they

occurred in the year 1866, we think it right to mention them here, because they form a sequel to the epidemic of the previous year.

The steamer *Virginia*, which left Liverpool on the 4th and Queenstown on the 5th of April, arrived at New York with merchandise and 1,043 passengers, occupying two-thirds of the deck; fourteen only occupied the cabins. Some of the passengers had joined the vessel at Queenstown. During the passage eighty-seven persons died, and when the health officers visited the ship, a man was dying of distinctly marked cholera. The greater part of the passengers consisted of Germans, who had reached Liverpool a day or two before the departure of the vessel; the mortality amongst them was greater than amongst the Irish or English; and it is believed that, considering that the disease did not exist at Liverpool, it was brought on board by these Germans. Until the 12th there had been no cases, but on the eighth day after leaving Liverpool a man who had the diarrhœa became suddenly worse and died. It is said that this man had been suffering from diarrhœa though unattended by any alarming symptoms, since the departure of the vessel. On the same day on which this first case declared itself, other persons were attacked, and, the epidemic developing itself more and more, the number of attacks, though not precisely fixed, is estimated at from one to two hundred.

The *England*, another steamer from Liverpool, arrived at New York on the 21st of April, having touched at Halifax. The captain's books showed 122 sailors, and sixteen deck passengers. Cholera broke out on board during the voyage. Between Liverpool and Halifax there were fifty deaths and a hundred and fifty in the town of Halifax itself where the vessel had put in on the 9th of April.

The *England* furnishes us with the following cases of transmission, devoid of interpretation, and likewise duly certified. The pilot who took the vessel into Halifax was attacked by cholera and returned to Portuguese Cove, nineteen or twenty kilomètres distant, where his family lived. Five of his children had cholera, one after the other, and two died. Another pilot of the same ship, who also returned to Portuguese Cove, fell slightly ill, and his sister, very seriously, after him. The sanitary officer of the port of Halifax, who had attended upon the passengers by the *England*, sank under an attack of cholera. *(Extracts from letter from Army-Surgeon Rutherford, communicated by Dr. Goodeve).*

The *Virginia* and the *England* were isolated in the lower bay and subjected to measures of disinfection. The passengers were disembarked and isolated, and the sick were sent into hospital on board the *Falcon*. When these particulars were given, seventy-two cholera patients, from these two vessels, were in hospital. From the 12th to the 22nd April, sixty deaths from cholera were counted.

GUADELOUPE.—On the 22nd of October cholera showed itself at Pointe-à-Pître and caused serious ravages among the blacks. In a population of 18,000 souls, as many as twenty-three persons were carried off in twenty-four hours. On the 18th November the disease still con-

tinued its ravages and had invaded Basse-Terre and Marie-Galante. It declared itself at Trois-Rivières, the person attacked having come from Pointe-à-Pître, and this case was followed by two others. The first case at Basse-Terre occurred on the 7th of November, the person attacked being a sailor from Pointe-à-Pître, and the disease then spread seriously. The proportion of deaths to sick was as 5 to 6.

On the 1st of November, the schooner *Marie-Athalie* arrived at Marie-Galante from Pointe-à-Pître, and during the 5th three of her crew were attacked. Shortly afterwards, the captain himself sank. On the 11th, the *Adda* entered the port, having lost one of her men during the passage. The next day the disease made its appearance at Marie-Galante, carrying off thirty-three agriculturists in three days. The only place remaining unaffected was the dependency of the Saintes which declined all communication with Pointe-à-Pître, Basse-Terre, and Guadeloupe altogether. A steamer named the *Sirène*, which arrived at Bridge Town from Pointe-à-Pître, was there subjected to a quarantine of fifteen days, although she had made a long passage and the crew were in very good health. Scarcely had the quarantine commenced when two sailors died of cholera.

The importation of cholera into Guadeloupe is attributed to the sailing ship *Virginie*, which left Marseilles on the 3rd of September and arrived at Pointe-à-Pître on the 9th of October. Cholera broke out close to the landing stage on the 3rd day after she began to discharge her cargo, which consisted of provisions; and none of her crew, of 12 or 15 men at the very most, had been sick.

Until the 22nd of November, those islands of the Antilles which were saved were those in which energetic measures had been taken to avoid all communication with infected places. (*Union Médicale, December* 12).

It is said that the mortality caused by cholera at Guadeloupe amounted to ten thousand persons.

Invasion of the CAUCASUS by cholera.—The first case of this disease made its appearance at Novo-Rossiisk, the person attacked being a Greek belonging to a band of emigrants who had come from Trebizond. He fell ill between the 10th and 11th of July. On the same day, the 11th of July, a sous-officer on board the Russian schooner, the *Anapa*, which was anchored in the roadstead, was stricken down. During the first four days following upon the appearance of cholera, there were nine fatal cases. Novo-Rossiisk, however, did not become a choleraic focus, and its exemption is attributed to the solid nature of the soil on which the fort of this name is built.

On the 18th of August the disease made its appearance at Soukhoum, the man attacked being a sailor belonging to the corvette *Yasterb*, from Novo-Rossiisk. Soon afterwards another sailor was landed at the hospital from the same ship. Both of them died, and cholera showed itself among the patients in the hospital and in the town.

On the 24th of August the disease made its appearance in the hospital at Poti, and at Kutais on the 31st. It disappeared completely in this latter town by the 20th of October, to re-appear with greater force after an interval of one month. According to authentic information, cholera made this second irruption into Kutais in the wake of a great crowd of peasants who had come from Koulamey and other surrounding villages to attend at the promulgation of the imperial manifesto relating to the enfranchisement of the communes. Cholera lasted longer than elsewhere at Koulamey and likewise Gori, where cases were still observed in the month of December. It displayed its tenacity especially among the soldiery encamped on the banks of the Rion and who labored at the construction of the fort.

On the 6th of September, a Frenchman named Déri arrived from Marseilles at Tiflis, having passed through Poti and Kutais, both places being infected with cholera; he and his wife both contracted the disease. Although they were both cured, it is believed that they imported cholera into Tiflis, for the diarrhœa that habitually prevails there assumed the choleraic form immediately after their arrival. Cases of distinctly marked cholera were observed in the first days of September. Nevertheless the epidemic did not become virulent considering that from the 12th of September to the 13th of November there were not more than 353 attacks and 116 deaths, and the disease only raged among the lower classes of the population.

Continuing its march to Kutais, the cholera spared Kartalinia, and only touched Souram and Gori, to make its appearance in the month of October in the district of Elizabethpol.

Cholera was imported into the Tiflis hospital on the 28th of September by some sick men of the reserve battalions who had arrived by the military road. There were 118 deaths among 221 cholera patients.

The epidemic made itself remarkable at Erivan by its violence. It was probably imported into the town, as it was into Nakhtchivan, from Persia; but also, and specially, by two detachments of troops sent from Tiflis to complete the garrison of Erivan. The disease made its appearance in the town on the 13th of October, and on the 12th of November the first case in the military hospital was reported. Altogether the number of cases among the inhabitants amounted to 392, 160 terminating fatally; amongst the soldiers there were, from the 12th of November to the 17th of December, 118 cases and 35 deaths.

The epidemic was very violent in the districts of Novo-Bayazid and Echmiadzin also. It had completely ceased at Tiflis by the month of November, and a month later it had disappeared altogether throughout the Caucasus, without, to all appearances, leaving secondary foci anywhere behind.

Of all places in the Caucasus those that are most to be dreaded with regard to cholera are the district of Gori and the banks of the Rion, on account of the concentration there of conditions favorable to the propagation of the epidemic.

The cholera which prevailed this year in the Caucasus made itself remarkable by its slow propagation and its feeble development. Cramps were rare; the epidemic raged almost exclusively among the indigent classes, and it commenced, as a rule, almost without an exception, with diarrhœa. (*Extracted from the minutes of the Medical Society of the Caucasus*). (1).

Although the cholera of 1865 did not stop at the limits at which we have just quitted the epidemic, since, on the one hand, it continued to show itself in some European countries, Germany, Holland, and Russia; and on the other hand, in Arabia among the pilgrims, we cannot follow it, for want of sufficient and authentic data further than the countries we have mentioned in our review.

Confining ourselves therefore to the facts we have hitherto been able to collect, we proceed to take them up and make a resumé of them in chronological order. We shall see by this statement that starting from Egypt, cholera radiated, almost simultaneously, upon different places in the Mediterranean, forming in them secondary foci whence the epidemic spread over a great number of localities previously uninfected. It was in this way that the cholera existing in Egypt since the second-half of May was imported into Malta and Marseilles in the early part of June, into Smyrna on the 23rd, into Constantinople and Crete on the 28th, Beyrout on the 29th, the Dardanelles on the 1st July, Cyprus on the 6th, and Ancona on the 7th.

From Constantinople, which became a secondary focus, the choleraic germ was transported, on the one hand, on the 26th of July, to Volo, to Cavalla on the 31st, to Salonica on the 1st of August, and to Valona on the 7th of August; and, in another direction, in the Black Sea, to Trebizond on the 25th of July (and thence to Erzeroum, where it broke out on the 22nd of August), to Sämsoun on the 31st, to Sulina and Toultcha on the 2nd of August, to Kustendje on the 4th, and to Bourgas on the 6th. From Kustendje and Sulina the disease ascended the Danube, infecting both its banks, and reached Roustchouk and Widin in succession. It penetrated by that route into Bulgaria and Macedonia, and, towards the end of the month of November, it reached Larissa, the chief town of Thessaly.

Odessa received cholera from Constantinople on the 23rd of July (2), and became a tertiary focus. From Odessa and from Galatz, which was also invaded, the epidemic spread to Borchi, where it broke out on the 4th of August, and then at Gavinosa. A number of towns in Podolia became in succession objects of attack. Bogopol on the 20th of September, Balta on the 1st of October, Berditchev on the 6th of October. On the 13th of October the disease made its appearance in the Govern-

(1).—These interesting particulars regarding the invasion of the Caucasus by cholera in 1865 were communicated to us by Dr. Bykow while the report was in the press. They form a sequel to the march of cholera by Trebizond and complete our review.

(2).—Cholera commenced at Odessa on the 11th July (new style 23rd). The dates of cholera in Russia, given in the originals according to the Greek calendar, have been harmonised in this report with the Gregorian calendar.

ment of Kherson, on the 6th in that of Kiev, on the 24th at Taganrog, on the 27th at Zitomir. The Governments of Volhynia, of Kovno, of Tver, and Voronega, were attacked in the month of November. The infection of Altenburg (24th August), which formed a fourth focus in the heart of Germany, is due to Odessa.

Smyrna, the second secondary focus, transmitted cholera to the interior of Asia Minor and to the Greek lazarettos on the 18th of July. Constantinople transmitted it to the Greek lazarettos on the 5th of August.

Beyrout, the third secondary focus, communicated the disease to almost all the towns of Syria, to Damascus, Aleppo (15th August), and successively to Biredjîk, Diarbekir, Mosul, and other places in Kurdistan.

Malta, the fourth secondary focus, transmitted cholera to Gozzo on the 21st of July.

Ancona, the fifth secondary focus, communicated the disease to twenty-one communes dependent upon it, and thence the epidemic spread to San Severo and invaded all the eastern portion of Lower Italy from Pescara to Otranto. It also invaded the town of Naples.

Marseilles, the sixth secondary focus gave cholera, on the one hand, to Toulon, Arles, Aix, and Paris; on the other to Spain, *vid* Valencia (8th July). After Valencia came Madrid, where the epidemic broke out on the 15th of August, Palma on the 19th of August, Seville on the 6th of September, Carthagena on the 10th, Murcia on the 20th. Finally, Elvas in Portugal received cholera from Spain on the 1st of October. From what we have said regarding Guadeloupe, we are bound to suppose, until we have more ample information, that the distant region of America owes the germ which gave rise to the epidemic to an importation from Marseilles.

The diffusion of cholera as far as the United States of America, is due according to all appearances, to the German emigrants who died on the passage, and who had left, some on the 11th of October from Havre, and others in the month of April from Liverpool,—both which towns had been exempt from the epidemic.

Finally, a last focus was formed on the 4th of September at Bassorah, after the return from Mecca of the Persian pilgrims, by whom Bagdad and all the other towns in Syria mentioned in our review were infected. (*See the map at the end of the review*).

It is an important point to notice, with respect to the importation of cholera, that wherever it has appeared, either in towns or in lazarettos, and whether it has raged in a place or been confined to a few isolated cases, the first attacks have always been observed, and that without a single exception, after the arrival of a ship, a caravan, and sometimes a single sick person, coming from infected places; moreover, that the most complete security prevailed everywhere before the disease broke out in Egypt; and that all the Mediterranean towns which were first attacked enjoyed perfect health.

Cholera in fact existed in Alexandria, as we have seen, from the commencement of June; and it was immediately afterwards, and within the space of a month, that it spread to the principal ports of the Mediterranean transported from Egypt by steam navigation to the most opposite quarters, regardless of winds and of all other atmospheric conditions. The same fact was repeated on the shores of the Black Sea, the starting point being Constantinople. Malta played the same rôle with regard to other places; and it is, we repeat, a proven fact that cholera in no place showed itself in the ports which it invaded until after the arrival of infected ships from a primitive or secondary epidemic focus.

By land, we remark the same phenomenon of importation. The caravan of Persian pilgrims traversing Syria from Beyrout carried cholera to Alleppo, and sowed it at Biredjik, Orfa, and Diarbekir, the whole length of its journey, by way of the Tigris and the Euphrates, as far as Kerbelah, Bagdad, and beyond. We have also seen the importation of cholera into Larissa and Roustchouk effected by the Bulgarian laborers who, in both cases, had left different foci and brought the disease with them. Let us call to mind, lastly, the cases of importation by a single sick person, as in the villages of Borchi in Podolia, Novo-Rossiisk in the Caucasus, Tchataldja in Macedonia, and in the towns of Mersina in Asia Minor and Altenburg in Germany. The Enos case alone appears to be obscure as to its origin; but can it not be explained as a case of importation without sickness? It could be so explained, if the subject of the first accident, who had arrived 13 days previously from the Archipelago, had not himself brought the germ of the cholera by which he was carried off; but the real facts of the case are, that he came from Mitylene, from Chio, and Tchechmé, where cholera did not exist, and that the bill of health of the ship in which he came was clean. Let us also notice here the case at Gozzo, one of choleraic diarrhœa, not followed by death, which gave rise to a considerable epidemic, *viz.*, 545 attacks and 253 deaths in a population of 15,459 inhabitants.

Let us pass on to some other remarks on the subject of importation. Cholera made its appearance at Constantinople, Gibraltar, Guadeloupe, and we believe we may add Marseilles, in the wake of maritime arrivals which had not been subjected to measures of quarantine.

The quarantine imposed at the Dardanelles, Smyrna, Beyrout, and Cyprus, was insufficient and defective, as well by reason of its short duration as the crowding of the lazarettos and the consequent liability to transmit infection beyond their walls; and it was not long before cholera overleaped these barriers, which had become more dangerous than useful to the countries the protection of which was their object. This is a proof that lazarettos constructed according to the ancient system and in proximity to towns, are incapable of preventing the invasion of cholera. We note a circumstance, however, in the case of Salonica, where the lazaretto, before the construction of the huts, placed at a great distance from the town, labored under even still more unfavorable conditions than those mentioned above. The

over-crowding was greater and the number of cholera patients more considerable here than elsewhere, yet the town was spared; might not this be one of those cases of local immunity observed in all epidemics, though their true cause is inexplicable? What tends to make one think so is, that cholera penetrated into some villages of the interior such as Galatzita, where it prevailed abundantly without touching the town, which was greatly more exposed to the focus along-side it. The three cases observed in the town, the persons attacked having come out of the lazaretto, support this hypothesis. Amongst the places which, by means of an entire separation and isolation of choleraic arrivals, escaped the epidemic we shall mention La Cavalla, Volo, Chio, and Crete, where encampments were set up in islets having no communication with the country. Other places, such as Bourgas, Sinope, Mitylene, Rhodes, and Benghasi, escaped likewise, thanks to encampments established at a great distant from dwellings and well watched. It follows from these experiences that lazarettos, in order to be sure and certain prophylactic agents ought, as far as possible, to be established in small islands, and built on extensive airy sites.

Greece presents a still more striking example of preservation owing to her system of quarantine being much more severe than any where else. She refused to admit choleraic arrivals into her ports, except those of the isles of Delos and Skiathos, where she received, as we have remarked, twenty-five thousand persons into quarantine. The islands of Sicily and Samos, surrounded, so to speak, by choleraic foci, were indebted for their safety to the system of repulsion which they strictly maintained from the outbreak to the complete disappearance of the epidemic. New York, finally, confirms in the most conclusive manner the efficacy of quarantine measures judiciously applied against the propagation of the choleraic scourge.

And now, gentlemen, is it necessary to ask us how cholera spread from India in 1865 to Mecca, where it raged, and to Egypt, and to the most distant places in the basin of the Mediterranean and the Persian Gulf? To us, as to all who desire to decide according to experience and without a pre-determination to resist the evidence of facts, the thing is clear, the answer easy. Cholera diffused itself by adhering to the men among whom it raged, and by developing and reproducing itself among them. The man who had cholera transmitted it to the man who had not it; masses of men infected by cholera carried it far and wide, by means of caravans, steam navigation, and railways, and communicated it to healthy masses of men. It was in this way that the pilgrims who had contracted it in the Hedjaz carried it to Egypt and disseminated it in Syria, in Mesopotamia, and the Persian Gulf, bringing it back, so to speak, towards its primitive focus. It was in this way, again, that the pilgrims and fugitives transmitted it by means of steam navigation to Malta, Constantinople, Smyrna, Ancona and Marseilles. And it was still again in this way that ships, leaving secondary foci, transmitted the disease across the Atlantic to the United States and the Antilles.

To sum up: in conclusion, we believe we are enabled to assert, relying upon the experience acquired in 1865,—(1) *That the propagation of cholera is effected by the movements of men, whatever may be the means of locomotion made use of;* (2) *that the more rapid and the more multiplied are the means of locomotion, the more is propagation to be dreaded;* (3) *that* cœteris paribus *a great infected mass or a single sick person may propagate cholera to great distances.*

The facts we have just recorded regarding the march of the choleraic epidemic of 1865 incontestably prove this, while at the same time they contain a number of useful lessons in a practical prophylactic point of view.

EDWARD GOODEVE, *President.*
BYKOW, SALVATORI.
BARTOLETTI, *Secretary-Reporter.*

Dr. Goodeve signed with the reserve, as noted in the minutes of the meeting of the 5th of July, that there were no proofs of the importation of cholera into the Hedjaz in 1865 by the pilgrims from India.

BARTOLETTI, *Reporter.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 24, OF THE 13TH AUGUST 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its twenty-fourth Meeting on the 13th August 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Monseigneur Brunoni, Archbishop of Taron, Vicar-Apostolic of Constantinople.

Dr. Ignace Spadaro.

For France :

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain :

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinolpe.

For Greece :

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy :

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands :

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia :

Baron Testa, Prussian Delegate to the Superior Council, of Health.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Persia :

Mirza Malkom Khan, Aide-de-Camp-General of His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor at the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi read the minutes of the last meeting but one, that of the 2nd July; they were approved.

Baron de Collongue read the minutes of the last meeting, that of the 5th July; they were adopted.

Dr. Dickson asked for the insertion in the minutes of a reserve he had entered at the last meeting regarding a passage in M. Bartoletti's historical report. He (Dr. Dickson) had said that he did not concur in the opinion of Dr. Bartoletti, as expressed in the report, that the cholera of 1865 had, in his belief, been imported into the Hedjaz direct from India. The disease in his (Dr. Dickson's) opinion, was already existent in Yemen at the end of 1864, and notably so at Sana.

M. Segovia, President of the Committee appointed to consider the 1st group of questions contained in the programme, regarding prophylactic measures applicable to cholera, submitted and laid on the table the report drawn up by the reporter of that Committee, M. Monlau, and also an appendix to the same report written by M. Mühlig on disinfection and disinfecting measures as applied to cholera. M. Segovia begged the President to be good enough to place the discussion of the report in the order of the day; he had officially submitted it at the present meeting, but copies had been distributed some days ago to all the members of the Conference.

On the motion of Count de Lallemand, seconded by MM. Stenersen, Monlau, and several other Delegates, it was Decided to commence the discussion immediately.

M. Salem Bey drew the attention of the Conference to the slow progress of its labors. He thought it useless to dilate on the causes which had produced the delay, but he thought it necessary to insist that the Conference should give a more energetic impulse to its labors. It could attain its object only by multiplying the number of its sittings. He proposed, therefore, that in future the Conference should sit on four days a week.

M. Fauvel pointed out that the printing of the report of the 3rd Committee had been delayed unexpectedly. The reasons for delay had no longer existed for some days past: but yet, contrary to his expectation, the printing had not been resumed with sufficient activity. If the printing office to which the work had been given continued in this way, he (M. Fauvel) would find himself obliged to withdraw his manuscripts, and have them put into type elsewhere. This again, however, would be a fresh cause of delay. The report of this Committee, which would consist of eight or nine printed sheets, was more than half printed, and it would be advantageous not to take it away from the *Levant Herald* press.

However, as he (M. Fauvel) anticipated that the printing could not be completed before a fortnight, he submitted the matter to the Conference.

The Conference gave entire liberty to M. Fauvel to act as he thought best.

M. Bosi would wish to know whether the Committee on the 2nd group of questions was in a position to submit its report, printed, before that of the 3rd Committee.

The President asked the Conference whether it was indispensable that the discussion of the 2nd report should precede that of the 3rd. The reporter of the 2nd Committee would, he was sure, do his best to submit his report in time, but his numerous occupations, unconnected with the Conference, might retard its preparation.

Several Delegates declared that they did not consider it necessary to discuss the 2nd report before the third. By entering upon the discussion of the latter immediately after that of the first, which might be done without inconvenience, time would be allowed to the reporter to finish his work.

M. Maccas proposed that the Conference should sit every day.

M. Sotto would prefer four meetings in the week (Monday, Thursday, Friday, and Saturday).

M. Sawas would prefer to have no more than two weekly meetings, because all the Committees had not gone through their appointed duties.

M. de Lallemand was of opinion that it would be advisable to resume what had hitherto been the practice, three weekly meetings.

A conversation upon the subject ensued between several Delegates.

The President put to the vote the proposal for four weekly meetings. It was rejected by 14 to 9.

Ayes:—MM. Sotto, de Noidans, Segovia, Monlau, Maccas, Gomez, Lenz, Stenersen, and Salem Bey.

Noes:—MM. Brunoni, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Bosi, Vernoni, Sawas, Pinto de Soveral, Testa, Hübsch, and Bartoletti.

A division then took place on M. de Lallemand's proposal, *viz.*, three weekly meetings (Monday, Thursday, and Saturday). It was accepted by a majority of 20 to 1.

The Conference then passed to the order of the day.

His Excellency the President invited the reporter of the 1st Committee to speak.

M. Monlau said he believed it was not necessary to read the text of the report, but only its conclusions, inasmuch as the Delegates had had time to read and digest it.

On the motion of M. Fauvel, who pointed out the advantage of a continuous perusal, it was decided to read the report section by section.

M. Segovia read the introduction.

M. Fauvel desired to make some observations:

This first part, or preface, he said, was a pompous panegyric of hygiene, in which some contradictions might be pointed out, and in which also there were some expressions, the exact meaning of which he did not quite understand.

Thus, for instance, at page 2, it was said:—"hygiene loses none of her conquests," a very rash and hazardous proposition, he thought, for it was averred, on the contrary, that hygiene easily lost her conquests. In fact, it was a lesson of history that countries formerly salubrious and flourishing, had become very unhealthy on account of a decay in material prosperity, the result of which was the abandonment and ruin of works which had maintained salubrity and fertility. Numerous instances of the fact could be cited.

In the same page, continued M. Fauvel, was to be found the following sentence:—"half-measures, lukewarmness, or negligence in their execution resulted in nothing satisfactory." Here the Committee did not agree with itself, nor with facts. In reality, to be efficacious, it was not necessary that hygienic measures should possess all possible perfection: they might be useful without being complete. It was superfluous, he thought, to give a proof of this. In a scientific report, it was important to use language so simple and precise as to admit of no uncertainty of the meanings of the terms employed. He (M. Fauvel) confessed he could not clearly understand the following sentence "but at the present day, when the progress of human industry has placed almost magical means at our command,

hygienic measures are in a position to receive a very powerful impetus: hygiene in the 19th century may, and ought to, become greatly more active than the hygiene of the Mosaic age, or the hygiene of the middle ages."

Hygiene, said M. Fauvel, like civilisation, became complicated. The hygiene of the Mosaic period was, for its age and for the Hebrews, as complete and perfect as that of our days. Only it was greatly more simple, and perfectly in harmony with the manners, the habits, and the civilisation of the Jews at that remote epoch. But it was not, perhaps, quite correct to say that the hygiene of the present day ought to be other, or more active, than that of Moses.

Lastly, said M. Fauvel, at the bottom of the same page was a proposition the meaning of which he could not catch: he would be glad if the reporter would be so good as to explain to him the meaning of the words "the hour of sanitary regeneration has arrived."

Many persons, replied Dr. Monlau, would have had some trouble in finding in the introduction to the report the contradictions pointed out by M. Fauvel, and still less expressions the meaning of which could not be caught. M. Monlau thought that the report was very simple and very clear, unless, indeed, it was desired to banish metaphorical language altogether from the domains of science: M. Fauvel had evidently stopped short at some expressions of this kind. To mention only the observations made by M. Fauvel regarding the essential part of the subject, all the arguments he had brought forward might easily be refuted, and, in the first place, when in the report mention was made of the conquests of hygiene, the Committee had meant by that to point out the difference existing between therapeutic means and the means made use of by hygiene. M. Fauvel ought to understand this difference thoroughly, for it was incontestable and nobody was ignorant that when hygiene undertook any thing it was for ever. The prescriptions of hygiene had a permanent character, and they could not be interrupted or suspended without great detriment to the countries which neglected or misunderstood this law. Why had Egypt been stricken by the plague? because, without a shadow of doubt, she had neglected the application of the hygienic measures which in former days had made her such a flourishing country. But, to change the instance, it was unnecessary to do more than mention the custom of wearing linen: since its becoming methodical and general, many diseases of the skin had disappeared. Could the same thing, he would ask, be said of therapeutic agents? No, certainly, they might be very efficacious to-day, and to-morrow exercise no sort of influence whatever on the health: an infinite number of instances of this might be cited.

With respect to half-measures, M. Monlau believed that M. Fauvel had given a strained interpretation of them. To be efficacious and to exercise a permanent action, hygienic measures ought to be progressive and of an onward character, as well as the sciences upon which they depended, for it must not be forgotten that hygiene was

rather an art than a science: it was the result of the combination of a great number of sciences. The problem, continued M. Monlau, had been put in general terms in order to make it understood that there were hygienic agents which were confined, limited, incomplete, or rather that there were agents which were applied without result and without method: it was all this which constituted half-measures resulting in nothing satisfactory. The hygiene of the 19th century ought to differ from that of Moses, said the report, and M. Fauvel disputed the assertion. But was it necessary to remind M. Fauvel of the works undertaken at the present day, immense works which were unknown to the ancients and to the middle ages? He did not think it was necessary. It sufficed to say that immense progress had been made in hygiene since the time of Moses, and that a great deal further progress would be made hereafter. Hygiene constantly progressed. Regarding the sanitary regeneration which M. Fauvel professed his inability to understand, the intention of the Committee had been to bring out clearly the importance of a fact belonging to our epoch, *viz.*, that only a short time had elapsed since people had begun to understand all the importance of hygiene, its laws and its agents, forming an index to the necessity admitted by all civilised nations to change the system, to abandon the beaten track of the ancients, for sewers, canals, drainage, the sanitation of towns and ports, the reclamation of marshes, and a thousand other things.

M. Fauvel congratulated himself on having elicited these explanations. On the motion of M. Sawas, who said he quite understood the introduction and considered it good and useful, His Excellency the President put it to the vote.

It was adopted unanimously.

M. Segovia proceeded with the reading of the report.

After the first section had been read, M. Fauvel said that the Committee had found a very simple way of facilitating its task, but it must be said this way consisted in not doing it at all. For instance, at paragraphs 6 and 7 the Committee spoke as follows with regard to original foci of cholera:—"Without enquiring whether the permanence is due to the natural conditions of soil and climate or to artificial conditions created by man himself, to new and continual causes of generation, or simply to continuous transmissions of the disease, it simply considers every locality in which cholera has established itself permanently as an *original focus*." It would be seen that by this declaration the Committee excluded all enquiry after the causes of this permanence, which was the capital point for solution. This being done, the Committee added:—"By regarding the question thus, we leave aside all research after *special* agents, and we have only to occupy ourselves with hygienic measures everywhere admitted to be efficacious against all pestilential diseases, *and consequently also against cholera*." In other words, said M. Fauvel, the Committee had confined itself to recommending the customary hygienic agents against the generation of cholera. It was as if, wishing to destroy an endemic

malarious disease, the study of the special causes which kept it alive had been neglected, and all that was thought necessary was the employment of the hygienic agents admitted to be efficacious against all endemic diseases. Who could fail to perceive the insufficiency of such a system? In this opinion, therefore, a lacuna existed there in the report of the Committee.

M. Monlau confessed that the remarks and arguments urged by M. Fauvel were, *primâ facie*, strong and imposing. But when considered closely, it was found that they could not be applied to the report. M. Fauvel forgot that this report was the sequel of the general report, in which all these questions had been carefully considered. The Conference had adopted the conclusions of the general report, and the Committee could not and ought not to modify a conclusion to which it had subscribed. What was said in the general report?—"We are not acquainted with the special conditions under the influence of which cholera is generated in India, and prevails there endemically in certain places." This conclusion to Chapter VI had been adopted unanimously. Consequently, the Committee could not stop to enquire into the special conditions which engendered and, so to speak, fixed cholera in India. At the same time it had taken care to indicate that every endemic disease possessed something specific, although what this specific property was exactly was unknown, and, in consequence, the essential conditions of endemicity had, at least to the present day, escaped the best directed researches. Nor could the Committee advise special agents, and it had confined itself simply to saying that by the judicious and methodical employment of the usual hygienic measures, some definite and conclusive advantage might be arrived at. In British India, for instance, great good had resulted from the extensive and methodical application of the hygienic measures comprised in the category of measures of sanitation. The Committee, in proceeding as it had done, believed it had followed the most natural and the most logical path. Was it wrong in not giving itself up to an enquiry into the generating causes of cholera? No, surely, for, besides that it was not called upon to do so, having been preceded in the task by the Committee which had drawn up the general report, it could have attained no practical result in devoting itself at Constantinople to enquiries of this kind. If the origin of cholera was to be known some day, that day, it might confidently be said, was yet far distant, and if M. Fauvel, instead of establishing a parallel between cholera and malarious fevers, had thought proper to consider cholera in connection with other diseases, he would have seen that if we know nothing of the origin of cholera, we are equally ignorant with regard to numerous other diseases, pestilential and non-pestilential.

At the request of several Delegates, His Excellency the President put the text of the first section of the report to the vote.

It was adopted unanimously.

With regard to the conclusion of this section, M. Bartoletti remarked that the Committee gave its opinion too categorically and too absolutely when it said :—" There are no direct means for the extinction of endemic foci of cholera." M. Bartoletti was of opinion that it would be an advantage to moderate this assertion, by saying, for instance, as had been done in the general report, " we know no direct means, &c." This would put a stop to all cavil.

M. de Lallemand quite concurred in M. Bartoletti's views.

M. Fauvel expressed himself to the same effect. It would be preferable, he thought, to say that in the present state of science we are not acquainted with any direct means for the extinction of choleraic foci. The Committee ought to have done this and given its opinion with reserve, for who could assert that some day direct means would not be discovered as they had been for marsh fevers ?

M. Mühlig admitted the justice of these remarks, and he confessed that it was a defect in the composition of the report. In other parts of its report, the Committee had given its opinion with greater reserve.

Dr. Goodeve was of opinion that it was necessary to adopt the verbal modification proposed by M. Bartoletti. Nothing authorised us to believe that cholera would remain for ever on the surface of the globe, that the conditions which co-operated towards its generation would always remain in existence, and that the means of preventing or stopping its development would always be wanting. It was absolutely necessary then to give a reserved opinion.

After having adopted this amendment, the Conference unanimously adopted the conclusion, which, it was decided, should commence with the words *we are not acquainted with, &c.*

The meeting terminated at 4-30 P. M.

Order of the day for the next meeting.

Continuation of the discussion of the report of the first Committee.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE, }
DR. NARANZI, } *Secretaries.*

Dated 17th November, 1866.

From—E. HAMMOND, ESQ.,

To—The Under Secretary of State for India.

I am directed by Lord Stanley to transmit to you, to be laid before Lord Cranborne, Protocols Nos. 25, 26, 27 of the late Cholera Commission at Constantinople, which have been just received from Dr. Dickson.

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 25, OF THE 16TH OF AUGUST 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its 25th meeting at Galata-Serai on the 16th August 1866.

PRESENT :

For Austria :

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium :

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgiuns.

For Spain :

Don Antonio Maria Segovia, Consul-General, Chargè d'Affaires.

Dr. Monlau, Member of the Superior Spanish Council of Health.

For the Papal States :

Dr. Ignace Spadaro.

For France :

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain :

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece :

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy :

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d' Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor of the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

Dr. Naranzi, one of the Secretaries, read the minutes of the 24th meeting.

Dr. Mühlig said, after these minutes were adopted, that he had an error to point out in minute No. 16, which had just been distributed,

and in which it was said :—" Dr. Mühlig asked whether the Persians " did not insist so strongly upon their country being removed from " the list of suspected countries, solely because they wished to evade " the institution of sanitary measures on their frontiers." As the discussion that was going on at the time referred to the question of the endemic nature of the Hedjaz, this sentence, Dr. Mühlig pointed out, was meaningless. He had really expressed himself to that effect, but he had done so at the 15th meeting, as might be seen by reference to the minutes thereof, when the question of endemicity in Persia was under discussion; these words were, therefore, erroneously recorded again in the minutes of the 16th meeting.

The order of the day being the continuation of the discussion of the report of the 1st Committee on the 3rd group, the 2nd chapter of this report was read.

Dr. Fauvel was of opinion that the Committee, though it said excellent things regarding naval hygiene in general, had not paid sufficient attention to what, to his thinking, ought to have been the principal object of its researches, *viz.*, the study of hygienic measures specially applicable to cholera, according to the different characters by which the disease was distinguished. Was it enough, for instance, at the departure of a vessel, to confine one's self to those general precepts of hygiene with which every body was acquainted and which were applicable to all diseases without distinction? Was it not necessary, since cholera announced its presence by precursory phenomena, to subject passengers and crews to a rigorous medical visit, and to prevent the embarkation of persons suffering from diarrhœa? Ought not transport and emigrant ships to be made the objects of special precautions? Should not the number of persons allowed to be carried by the ship, which was fixed by law at a certain number per ton, be reduced in times of cholera? It was known that articles of wearing apparel were redoubtable agents of transmission; articles carried by emigrants had been seen to communicate cholera after a voyage of 15 days: were there not more precautions to be taken here? Should it not be required that wearing apparel should be subjected to washing before being shipped? Ought not particular care to be taken in the establishment of latrines? And lastly, was there not the important question of provisions, that of merchandise, such as rags, drills, animal matter, &c., the trade in which should be prohibited in times of cholera?

Dr. Fauvel did not care to carry this enumeration further, but he expressed his regret in conclusion that the Committee, which had recommended the publication of a manual of naval hygiene for the use of the mercantile marine, had not seen fit to draw up the manual itself, summarising in it, in a popular form, adapted to the commonest understanding, the principal hygienic measures to be taken on board ships, with a special view to cholera.

Dr. Monlau replied that Dr. Fauvel had wrongly reproached the Committee with having confined itself to generalities: properly speak-

ing, there was no naval hygiene peculiar to cholera; if all the general indications contained in the report were well executed every thing that could possibly be done, would have been done for the prevention of the transmission of cholera by ships. It was not quite correct besides to say that the Committee had been guilty of the omissions pointed out by Dr. Fauvel. Did not the report say that it was necessary to state the condition of the passengers and crew before departure? Did it not also notice the dangers of over-crowding? Did it not mention the surveillance to be exercised with respect to the neatness of wearing apparel, as well as the good quality of provisions? Did it not recommend the prohibition of the transport of certain kinds of merchandise? And finally, in Dr. Mühlig's work annexed to the report, was not mention made of every thing relating to the institution of latrines, in short, the disinfection of excrementitious matter? As for the manual, Dr. Monlau thought its preparation was the business of academies, of faculties of medicine, or of boards of health, and in no way the business of the Conference; a large number of manuals already existed, and all that the Committee desired was that they should be rendered obligatory.

Dr. Mühlig, who concurred in the remarks made by Dr. Fauvel, observed that if the report did not go sufficiently beyond generalities it was because they had confined themselves too strictly in Committee, to the observance of the official programme adopted by the Conference, the questions in which were not put with very desirable precision. Dr. Mühlig had been a member of the Committee, and he had, therefore, signed the report, but under reservation; he would acquaint the Conference with the reasons of the reservation as the point to which he objected came up for discussion.

Dr. Gomez, in reply to Dr. Fauvel, pointed out that the Conference ought, above all, to endeavor to extract from the data possessed by science whatever needed sanction in connection with the questions whose study and elucidation was its object; it was difficult to express new ideas in the matter of hygiene, and the Committee could with difficulty, so far as naval hygiene was concerned, say any thing but what everybody knew. It had, perhaps, dilated too much upon the great rules of general hygiene, but, having regard to the considerable rôle performed by ships in the point of view of the transmission of cholera, did not this hygiene possess capital importance? And, moreover, if its rules were known, were they not also greatly neglected? And should not a part of the questions which, according to M. Fauvel, ought to have been taken in hand by the first Committee, for instance, those relating to goods, have been taken in hand rather by the Committee, which would occupy itself with sanitary police and quarantine measures? As for the other questions mentioned as having been omitted, because they were not contained in chapter II., were they not discussed in other parts of the report, particularly every thing relating to disinfection? Dr. Goméz made it a point to add, however, that if the Conference thought it would be convenient to

complete the chapter on naval hygiene in the manner indicated by Dr. Fauvel, and by laying greater stress upon the hygiene proper to cholera, the Committee would certainly offer no opposition.

Dr. Fauvel said that he did not mean that the Committee ought to invent, but it ought, taking for its ground-work the facts observed by science, and profiting by the lessons they contained, to lay down with greater precision the rules of naval hygiene more peculiarly applicable to cholera, which was the object of the Conference. Every thing touching hygiene, moreover, was within the province of the first Committee, the study of quarantine measures being distinct from that of hygienic measures.

Dr. Bartoletti concurred in these remarks.

Some members suggesting the close of the discussion, Dr. Fauvel submitted to the Conference the proposal that the first Committee be invited to draw up the manual of hygiene recommended by it.

Dr. Gomez repeated that this was not the business of the Conference. Hygienic prescriptions which were laid down for observance were not the same in all countries; they varied according to climates as well as legislation: the preparation of the manual would be recommended to the various Governments, the bases for it being found in the labors of the Committee.

Dr. Mühlig, at the request of Dr. Maccas, explained that the difference of opinion between himself and the other members of the Committee related to the manner of understanding the work. Dr. Mühlig believed that the question should have been treated in a special point of view, and he would have wished that the Committee had paid greater attention to a counter-project submitted by a certain number of members of the Conference for the classification of the questions in the 3rd group. Dr. Mühlig thought that, without calling upon it, as Dr. Fauvel proposed to do, to draw up a manual of hygiene, the Committee might be asked to complete its report in conformity with indications given in this respect in Article 5 of the 1st section of the counter-project.

The President put to the vote the text of chapter II., which was adopted unanimously, the question as to whether it ought or ought not to be completed being reserved.

Dr. Fauvel remarked, with reference to the conclusion, that the proposal to invite public competition and to award prizes to the inventors of discoveries tending to ameliorate the hygienic conditions on board ships, and that of the publication of a manual of naval hygiene, &c., did not form a reply to the question requiring solution, and which was thus conceived :—" Hygienic measures to prevent as much as possible the importation of cholera by sea" (page 5 of the report). The advice given by the Committee was excellent, but there was no connection between the question and the answer; and, besides, it was not a conclusion. Dr. Fauvel asked that it should be struck out.

Dr. Monlau replied that if there were no direct known means to stifle cholera in its birth-place, neither were any known that could be opposed to its importation: in both cases there was no resource but in hygienic measures. Such of these measures as were applicable to ships had been developed by the Committee in the chapter which had just been adopted, and as it did not think it was necessary to repeat these measures in the conclusion, it confined itself to recommending the various means which seemed to it to be capable of contributing most effectually to perfect and render more complete the practice of this naval hygiene. How scurvy originated was not known, and yet the improvement of the general hygienic conditions of ships had resulted in the almost complete disappearance of this disease. Why should not similar efforts have similar results with respect to cholera?

A conversation ensued between Dr. Maccas, Dr. Goodeve, Count de Lallemand, M. Segovia, Dr. Gomez, Dr. Sotto, and M. Stenersen as to whether a division upon the conclusion of chapter II should not be postponed, as proposed by Dr. Salem Bey, until the Conference should decide whether it would be well or not to add an additional article to this chapter. The Conference decided, by a majority of 19 against 4, in favor of postponement, and then, with the single exception of Dr. Monlau, decided upon the necessity of an additional article for the completion of the chapter. The Committee was left at liberty to draw up this article in such a manner as it should deem proper.

Count de Noidans then read chapter III, which was adopted unanimously (text and conclusion), and then chapter IV was read as far as that part of it which related to the soil.

Dr. Fauvel, with reference to what was said regarding the morbific influence of the gases evolved from decomposed excrementitious matter, and especially the carbonate and sulphydrate of ammonia, remarked that the Committee advanced a fact which was not sufficiently proved. In the opinion of Dr. Fauvel, it was not so much from these gases as chemical agents, but rather the probably organic principles which were evolved at the same time, that the vomitting and diarrhœa produced by excrementitious exhalations arose. This was a point of great importance; the destruction of these gases in fact would not be enough to remove from the exhalations in question the deleterious action exercised by them upon man. There was poison contained in these exhalations, as there was poison contained in the effluvia arising from marshes, which produced malarious fevers; there was a poisonous principle, certainly volatile and probably organic, but the nature of which was not yet known by science.

Dr. Lenz urged in opposition to Dr. Fauvel the experiments undertaken by Pettenkofer: dogs had been placed by M. Pettenkofer under receivers filled with carbonate and sulphydrate of ammonia,

and the results obtained were attributed to the action of these gases.

Dr. Bykow supported M. Fauvel. It was simply because the development and evolution of the gases in question during the fermentation of the *excreta* coincided with the evolution of the poisoning principles which formed at the same time that they performed a part in the production of cholera, typhoid fever, and diarrhœa in general.

Dr. Gomez admitted, with Dr. Fauvel and Dr. Bykow, that in the decomposition of matter contained in latrines and cesspools, the ammoniacal portions, or those other ingredients indicated by chemistry, were not the only injurious agents; there were certainly organic agents which chemistry had not yet been able to investigate thoroughly, and which must be the real agents of certain infectious diseases. Dr. Gomez believed, however, that the text of the report might be maintained because, if among the products of the putrid fermentation of the matter of cesspools, the carbonate and the sulphydrate of ammonia were indicated, as well as the sulphuric gas, as the peculiarly injurious agents, it was not said that they were the only ones capable of becoming so. Moreover, ammoniacal products were not only poisons in themselves, but they were known also to possess an action capable of favoring the development of the morbific germs which were the result of the putrid fermentation of the matter of cesspools, or which happened to be mixed up with such matter. It was thus, it was supposed, that choleraic *dejecta*, in a fresh condition, contained the germ of the disease, but in such a state that the germ was incapable of transmitting itself, while it was no longer so when the putrid fermentation commenced and the ammoniacal products formed themselves. Experience seemed to prove in fact that these products exercised an influence peculiarly favorable to the evolution through which the choleraic germ must necessarily pass to acquire the power of transmitting the disease.

After these remarks, the first part of chapter IV, as far as the paragraph relating to *the soil*, was put to the vote and unanimously adopted.

Count de Noidans read the remainder of the chapter, including its conclusions.

Dr. Bykow, with reference to the disinfection of excrementitious matter, remarked that in Mossellmann's system disinfection was applied to the solid as well as to the liquid *excreta*, with this difference that in the first case quicklime was employed and in the second lime already slaked by urine. But one of the disadvantages of the system being that *excreta* disinfected by lime could not be used as manure for calcareous soils, it had been rejected in some places where the soil abounded with lime.

Dr. Lenz, in reply, said that Dr. Bykow's remark was just, but that the disinfection of solid *excreta* by Mossellmann's system was not

effected in their receptacles, but only after their removal to the poudrette manufactories.

Dr. Bykow maintained what he had said: it was in the fosses themselves that the disinfection of solid excrementitious matter was carried out.

Dr. Fauvel would not admit the assimilation which the Committee established, with respect to choleraic infection, between the *dejecta* of men and the *dejecta* of animals. The *excreta* of the latter was clearly unhealthy, but it could not be said that it was dangerous, and especially in the point of view of cholera.

Dr. Fauvel requested, moreover, that the prohibition of the transport of corpses to an uninfected place, as recommended by the Committee, should be rendered less absolute. It was a thing that frequently happened in practice. Now, Dr. Fauvel did not believe that this conveyance could present any disadvantages, after the adoption, it must be understood, of all the necessary precautions, embalming the corpses, metallic coffins, &c.

With respect to the transport of corpses, Dr. Goodeve shared Dr. Fauvel's views.

Dr. Lenz, in reply to Dr. Fauvel, explained that the Committee did not mean to assimilate human and animal *excreta;* what the report simply suggested was that care should be taken that the soil did not become impregnated with the latter. In regard to the conveyance of corpses, if the Committee recommended its prohibition, it was not because it deemed it absolutely dangerous when every precaution had been taken; there could not fail to be exceptions in practice, which it was unnecessary to anticipate.

Dr. Monlau, for his own part, believed that the transport should be completely prohibited in times of epidemics.

Dr. Fauvel's proposal to permit the transport of the corpses of cholera patients under certain conditions was put to the vote and adopted by a majority of 13 to 3.

The Conference then unanimously adopted the text with this modification of chapter IV, relating to *the soil.*

Dr. Bartoletti thought it would be necessary to modify the first paragraph of the conclusion, *viz.*, that "the sanitation of towns is an efficacious preventive means to oppose to the ravages of cholera and for their limitation." Measures of sanitation, complete as they might be, could not prevent the importation of cholera, and the employment of the word *efficacious* rendered the conclusion too positive.

On the termination of a conversation which ensued upon this subject between Count de Lallemand and Dr. Fauvel who supported Dr. Bartoletti's remarks, on the one hand, and Drs. Monlau, Goodeve and Sotto, who defended what had been written by the Committee, on the other, the Conference decided that the conclusion should be modified

as follows: "the sanitation of *towns* is a preventive measure *of the first class* for," &c.

The conclusion thus modified was adopted unanimously.

The meeting terminated at 4-30 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE, DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 26, OF THE 18TH OF AUGUST 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its twenty-six the meeting at Galata-Serai on the 18th August 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Medical Attaché to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretay to the Legation of His Majesty the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul General Chargé d' Affaires.
Dr. Monlau, Member of the Superior Spanish Council of Health.

For the Papal States:

Monseigneur Brunoni, Archbishop of Taron, Vicar-Apostolic at Constantinople.

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé de'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant-Medical Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the Cairo School of Medicine, Special Physician to the Princess-mother of His Highness the Viceroy of Egypt.

His Excellency the President called upon Count de Noidans to continue the perusal of the report upon the hygienic measures to be adopted against cholera.

The discussion at the last meeting had stopped at page 34. Count de Noidans read the appendix to the 4th chapter.

M. Mühlig made the following remarks with reference to the text and this appendix—remarks which he had proposed to submit to the Conference; and for this reason he had signed the report of the Committee, of which he had been a member, under reserve.

He was not, he said, altogether of the opinion of the Committee relative to the question whether there were private or public measures of hygiene, measures of sanitation, applicable on a sufficiently great scale to permit of the distinction or dimunition, in a sensible degree, of the predisposition to choleraic infection. M. Mühlig thought that the Committee, in replying to this question in the affirmative, had been too absolute in its appreciations, and had not paid sufficient attention to the insurmountable practical difficulties in the way.

M. Mühlig explained as follows the views entertained by him relative to this question. Everybody knew, he said, that cholera was the disease, *par excellence*, of the indigent classes, who were obliged to live in unfavorable hygienic conditions, which generally diminished the vital resistance. Now, whatever efforts might be made by Governments to soothe the misery and to alleviate the condition of the laboring classes, it would never be possible to offer them the hygienic advantages exclusively enjoyed by the well-to-do classes. In fact, it was not enough to widen streets, to see to the construction of cesspools, &c.; more than all that they stood in need of well-ventilated and cleanly dwellings, restorative animal food, scrupulous cleanliness,—in short, all the conditions of comfortable life. All this was absolutely necessary to endow them with that vital resistance, the absence of which constituted the predisposition to choleraic attacks. Hygienic measures no doubt were of capital importance, but almost exclusively in favor of the comfortable classes, and they were not applicable on a scale sufficiently great to preserve the masses from the Asiatic scourge.

M. Mühlig was of opinion that too much care could not be taken against exaggeration. In conclusion, he said that, in pursuing an unattainable ideal, the attention would be diverted from measures of

isolation, and the efforts which ought to be made to apply them as closely as possible to choleraic foci.

M. de Lallemand said that he supported M. Mühlig and entirely concurred in his view of the question, for he thought also, and his opinion had long been formed, that hygienic measures, however efficacious they might be, could not in any society be applied so widely and so completely as was required by science for their action to be spread over all classes of society. Their application would always remain limited, and the indigent classes would profit less than the well-to-do class by their beneficial action.

M. Monlau was of opinion that M. Mühlig and Count de Lallemand had both viewed the question, starting with an exaggerated principle. The question put by the Committee did not consist in seeking whether, over and above hygienic measures extensively applied, other efficacious measures existed. The Committee itself had taken into account many other prophylactic measures applicable to cholera, and capable of lessening the predisposition to that disease. It had confined itself to saying that measures of hygiene, public or private, capable of destroying or lessening the predisposition to choleraic infection existed: that was all.

M. Mühlig, continued M. Monlau, had reproached the Committee with being too absolute and affirmative in its appreciations, but he had forgotten that he had signed, and so had M. de Lallemand too, the general report in which mention was made of hygienic measures capable of diminishing the predisposition to choleraic infection. He had forgotten also that measures of isolation and disinfection, for which he had a great predilection, entered into the category of hygienic measures. He pretended that works of sanitation only benefited the well-to-do classes, but could he deny that the modern drainage works, for instance, had not greatly benefited all classes without distinction. Not only had the Committee, in M. Monlau's opinion, nothing exaggerated, but it had stopped within the limits of the possible in appreciating the rôle of hygiene: this rôle was much greater than had been said; it was immense, and England, Belgium, and other countries, in undertaking gigantic works of sanitation, had made known the value of the means within the province of hygiene. The works undertaken were of a nature to change the bases of society.

In support of his assertions, M. Monlau quoted some facts extracted from reports regarding London. In one quarter of London, he said, Lambeth Square, the population used to be special victims to epidemics; but since great works of sanitation had been carried out there, the district had remained free from cholera, typhus and other fevers, and other epidemic diseases (*vide* the account for May 1846, in Viscount Errington's statistics).

Another fact:

The city of London having been sanitated house by house, water of good quality having been supplied to it, and communications with

cesspools beyond the city having been intercepted, the mortality of its population fell below that of Hampstead Road,—a very salubrious locality, but which had not undergone the same improvements.

M. Monlau said, in conclusion, that, with regard to the plague, the only prophylactic had been civilisation, *i. e.*, the general well-being, the great progress accomplished in agriculture and trade. Those were the sciences that had produced these happy results, as had been said by Auber Roche, under the auspices of public hygiene. There could be no doubt that some day as much might be said of cholera.

In the struggle, said Dr. Goodeve, maintained between hygiene and measures of isolation and purification, he felt himself disposed to take the part of hygiene. It could not be doubted, he thought, that if hygiene was applied methodically and on a great scale, all classes of society would profit by it equally. It might even be said that measures of hygiene were not only more efficacious, but that their extensive application to great masses was frequently more easy. In his opinion the frightful mortality in Broad Street in 1854 might have been greatly diminished by the very simple expedient of closing the pump from which the population took its supply of water before the outbreak of the epidemic.

Many instances, said Dr. Goodeve, which might be extracted from the history of recent epidemics, demonstrated that hygienic measures were very efficacious in diminishing, and even preventing, choleraic epidemics. This beneficial influence of hygienic measures in connection with the intensity of a choleraic epidemic was demonstrated by the difference in the mortality in two parts of London in the last epidemic before that of 1854, and that of this year, during which they were provided with water. This fact was mentioned in the general report.

Dr. Goodeve gave another instance also. A town in England, Gateshead, was singularly severely stricken when epidemics prevailed. During the last epidemic of cholera the town was very carefully cleansed, and it remained so free from infection that many strangers fled to it for safety.

Dr. Goodeve reminded the Conference that on many occasions the efficacy and importance of hygienic measures had been urged upon it. The point indeed was one upon which everybody was agreed. He had therefore some difficulty in understanding the difference of opinion that at present existed upon this subject. In fact, he was not desirous that such a discussion should be prolonged, for it might expose the Conference to severe criticism on the part of qualified men who had never felt a doubt of the importance and efficacy of hygiene.

M. Mühlig expressed his astonishment at finding that several of his colleagues believed him to be opposed to hygienic measures. He was of the same opinion as the Committee with regard to the efficacy and value of hygiene, and he differed in one point only, *viz.*, that these

were measures applicable upon a great scale, and that these measures were capable of destroying the predisposition of the poorer classes to choleraic infection. Were the ravages of cholera, he would ask, less now than in 1830 and 1848? Taking everything into consideration, the mortality was the same. And yet works of sanitation had been undertaken everywhere. In 1830 the epidemic at Constantinople carried off no more than 3,000 victims, while the number last year amounted to 10 or 12,000, and perhaps even more, and yet the capital had for some time been in better hygienic conditions than had ever been the case previously. M. Mühlig did not deny that good hygienic measures could lessen the predisposition, but he believed them to be very difficult of application. He believed, moreover, that there were certain mysterious, indefinable conditions which concurred to render an epidemic more or less violent, whatever might be the hygienic condition of the country in which the scourage raged.

M. de Lallemand desired that it should be noted, and he desired it very strongly, that he had never entertained the idea of setting up an antithesis between hygiene, in the prophylactic measures it counselled, and measures of isolation. He was aware of the importance of the former, and appreciated them quite as much as others did, but he believed—and here was the point he insisted upon—that if there was a public hygiene very efficacious and applicable to all classes of society, there was also a private hygiene, that of dwellings, for instance which, not being capable of extended application, could benefit only the well-to-do classes.

M. Maccas confessed that, notwithstanding the attention with which he had listened to M. Mühlig's observations, he had not been able properly to catch the meaning of his proposition. He preferred saying that to believing that M. Mühlig had seriously entertained the notion of disputing or lessening the efficacy of hygienic measures. But if he had had some difficulty in catching, as fully as he could have wished, the ideas held by M. Mühlig, it had been easy for him to see that in his first speech, as also when he spoke a second time, M. Mühlig had said very clearly that hygienic measures could not be applied upon an extensive scale, and that, if too much importance was attached to them, the result would be the *weakening of the importance* due to isolation and disinfection.

M. Maccas thought that nobody disputed the importance of isolation; and if isolation could always and everywhere be applied, as absolutely as was necessary for the attainment of the object of prophylaxy, it would, beyond doubt, be the surest means of guaranteeing Europe against the scourge. But everybody was aware of the difficulties encountered in its application, and it was incontestable that in some countries especially these difficulties were so great that men of great authority, well known to M. Mühlig, had gone so far as to declare that *absolute isolation* was altogether impossible. For the rest, said M. Maccas, he did not see that in the article under discussion the least allusion was made to a comparison between disinfection, isolation,

and hygienic measures of another kind; on the contrary, they were all, in several places, warmly recommended by the Committee itself. But after all, could it be disputed that isolation as well as disinfection were hygienic measures as well as those of sanitation, properly so called? Now, even granting this distinction for a moment, one could not but contest M. Mühlig's assertion that hygienic measures could not be applied so extensively as to allow all the inhabitants of a country to profit by them in the same degree. He (M. Maccas) held quite a contrary opinion, and he believed that in this respect all medical men went with him. These were, to his thinking, the benefits of public hygiene, benefits which were derived from measures of sanitation executed in a country or town, which were diffused through the entire population of that town or country. But measures of private hygiene, in M. Mühlig's opinion, could not be executed by all the inhabitants. Here M. Maccas agreed with him; but if the solicitude of the authorities could not succeed in extending the benefits of hygiene to all classes of society without distinction as efficaciously as could be done by the rich from their own resources, were there less difficulties in carrying out disinfection as understood by science at the present day in the sense of a preventive measure.

When they should come to speak of disinfection, said M. Maccas, it would be seen that this measure, to attain its object, ought to commence as much as possible before the declaration of the epidemic, and that it should be general, daily, and it might even be said incessant; and after every evacuation by day as well as by night, for a single infected evacuation might give rise to the multiplication of the much-dreaded germ. It followed from all this, continued M. Maccas, that there were immense difficulties in the way of hygienic as well as other measures, and that it could not be precisely ascertained whether the negligence of the one or the other resulted in the greatest, and also in the most certain, damage to the mass of the inhabitants.

M. Maccas declared, in conclusion, that though he was as much in favor of isolation and disinfection as M. Mühlig, he was none the less one of the defenders of the opinion expressed by the Committee.

M. Sawas confessed he failed to perceive in the report of the Committee the smallest allusion that could authorise the belief that it recommended hygienic measures to the detriment of measures of disinfection and isolation.

Those who disputed the opinion of the Committee had often, said M. Sawas, pronounced the words *public* hygiene and private hygiene, but the notion of private hygiene had so predominated, that M. Mühlig had affirmed that hygiene could do nothing for the poorer classes. He evidently forgot that the question was not of that hygiene which treated of the bad effects our habits had upon the play of our organs, but of hygiene in general, touching great centres of agglomeration, the hygiene of great manufactories, of ports and dockyards, of that hygiene which related to the drainage of water, the reclamation of marshes, &c., &c. This part of hygiene,

said M. Sawas, was particularly connected with the indigent class, and it was notorious that the masses had latterly been everywhere the object of the most praiseworthy efforts for carrying out the precepts of public hygiene, the object of which was the improvement of the life of all classes, but especially the poor, by whom most advantage would be derived from them.

M. Sawas also touched upon the question raised by M. de Lallemand, *viz.*, that private hygiene was not called upon to introduce itself into the dwellings of the poor and improve their condition, and that consequently it was not so important as was deemed by the Committee. M. Sawas protested against such an assertion: he believed, on the contrary, that the dwellings of the poor formed at the present day, in the system of hygiene, the object of great philanthropic cares on the part of Governments. In England, for instance, what had not been done in this respect? But at the same time it should not be forgotten that the working man passed very little, scarcely any part, of his life at home. Almost his entire time was spent in manufactories, in dock-yards, in ports, &c. Now, it was clear that the science which specially occupied itself with the places where the poor passed their existence ought to be of greater benefit to him than any other.

In summing up, M. Sawas said that not only did he believe that the Committee had not recited a pompous penegyric of hygiene, but that on the contrary it had not sufficiently showed all the importance of the part it performed. M. Sawas requested that the article should be put to the vote as it stood.

M. de Lallemand anticipated that he would be obliged to vote against the article if the word *destroy* were maintained in it. He thought it would be enough to say that there were hygienic means, measures of sanitation, capable of lessening the predisposition to choleraic infection.

M. Segovia pointed out to him that the word "destroy" was used only in the question framed by the Committee.

M. Lenz believed that the Committee had nothing exaggerated. Everybody, he said, was agreed as to the efficacy of hygienic measures, but some objected that they were not capable of sufficiently extensive application. Did the Committee, he would ask, assert that they were so applicable now? No: it specified when and under what conditions they could become so, in proportion, it said, to the comprehension by Governments and people that the greater number of endemic and epidemic diseases derived their violence and extension from the crowding and fatal habits connected with them. However, M. Lenz believed that the question, in itself, scarcely admitted of discussion. It was a kind of profession of faith on the part of the Committee; and everybody was at liberty to vote upon the question according to his faith in the efficacy of hygienic means on the one hand, and in the good sense, on the other, of the masses who would understand this efficacy better and better in future.

M. Bykow was of the same opinion as M. Monlau. Perhaps, he said, the object the Committee proposed to attain by means of the measures it recommended was difficult of attainment; perhaps also complete success could never be obtained in destroying the predisposition to choleraic infection. But was this a reason for neglecting the use of such measures, and had not experience proved that the works of sanitation recently undertaken had greatly benefited the poor?

M. Segovia was of opinion that the Committee had been undeservedly reproached with having exaggerated the efficacy of hygienic measures. If there was exaggeration anywhere, said M. Segovia, it was rather on the part of those who opposed the report. In fact, according to M. de Lallemand himself, who was ordinarily very moderate in his language, the Committee had framed a proposition impossible of realisation,—an Utopian idea. But, added M. Segovia, if the enunciation of the report were properly considered, it would be seen that the Committee did not assert, it only expressed a hope, that in course of time hygienic measures, largely applied, might lessen and even destroy the predisposition to choleraic infection. It was rather a wish it expressed, and this wish, he thought, was not only capable of realisation, but it might even be maintained that with some nations it had already been realised. In the opinion of the Committee, continued M. Segovia, the question was not to render the poor rich, but simply to make them benefit, as much as the well-to-do classes, by hygienic measures. Could it be denied, asked M. Segovia, that in England at the present day the people were better fed and ate more animal food, and that they were better protected against the severity of the climate, than they had ever been before. All classes then profited almost to the same extent, and this was why the Committee hoped that some day it would be given to hygiene to destroy even the predisposition to choleraic infection. M. Segovia was of opinion that the paragraph was well drawn up, and he proposed that the article should be put to the vote as it stood.

M. Maccas showed that nothing would be gained by the elimination of the word *destroy*, which was to be found only in the enunciation of the question, while in the answer given by the Committee it resulted that it *hoped* to succeed some day in destroying, and then he proposed that the article should be voted for as it stood.

M. Gomez offered some remarks upon the same subject. Too much apprehension, he said, was felt to see the report exaggerate the importance of hygienic measures as a prophylactic agent against cholera,—an exaggeration, he thought, which might do wrong to measures of isolation and disinfection, in which it was especially desired to find the means of safety. People had gone so far as to express doubts even in regard to the efficacy of hygienic measures, and the influence they could exercise upon the poorest classes of town populations during the prevalence of epidemics.

In truth, said M. Gomez, nothing but surprise could be felt that such opinions could come from a medical man; and if the Conference,

he remarked, had to pronounce upon such a debate, it could not most certainly fail to compromise itself in the estimation of Europe, as had been very judiciously said by Dr. Goodeve. M. Gomez hoped the Conference would not do so, since its opinion upon the subject had been quite differently expressed in the general report. And how, continued M. Gomez, could any action be taken in opposition to the movement which everywhere led Governments to employ measures of hygiene on the most extensive scale, and when medical men of all countries believed it to be their duty to be the first to second by their advice the impulsion so given? Hygiene, M. Gomez thought, was only civilisation, and it was only by its means that the plague and other scourges had disappeared from the midst of Europe. It would not do, he said in conclusion, to attempt to shake the faith which made persons reasonably hope that hygiene would succeed in very much diminishing, if not in altogether stopping, the ravages of cholera wherever it might manifest itself. M. Gomez insisted that the article should be put to the vote such as it was.

M. Fauvel believed that the discussion had arisen out of a misunderstanding, but that substantially all were agreed, the only difference being in the manner of viewing the question. It was, he thought, incontestably true, and history gave credence to it, that there were measures of hygiene capable of destroying the predisposition to cholera. But that, he believed, was not the point in dispute. MM. Mühlig and de Lallemand had wanted to know whether there were measures of hygiene which could be made so general as to destroy, not in a given locality, but to a great extent, all predisposition to cholera. M. Fauvel did not see that the Committee had pronounced upon that point too decisively. It had only expressed a wish, and the article might therefore be adopted as it stood.

M. de Lallemand said that, after the explanations that had been given, all was set right. The discussion had been allowed to go on only with the object of ascertaining whether there was any hope of succeeding in destroying cholera in the same way that many malarious foci had been destroyed. This was what M. de Lallemand did not believe.

At the general request, His Excellency the President put the supplement to the 4th chapter to the vote. It was adopted unanimously.

M. de Noidans read the 5th chapter, stopping at page 40, many Delegates having expressed their intention of speaking.

M. Mühlig believed that the theory of the Committee as to public assistance was not sufficiently justified by the facts. The Committee expressed the opinion that by certain measures, those, for instance, of public assistance, it would be possible to arrest a choleraic epidemic, or at any rate to diminish its intensity. M. Mühlig did not share this opinion: if cholera, he thought, once developed itself into an epidemic, no human power could stop its progress.

The importance of public assistance was based upon the theory that, in treating diarrhœa in time, the development of cholera might be prevented. It was a somewhat widely-spread opinion, but let the tendency exist, and cholera would break out, no matter what might be done and in spite of the treatment applied to the first symptoms. When the conditions of attack existed, *i. e.*, an intensity of poisoning, and an absence of vital resistance, the choleraic attack would infallibly occur. Mention was made in the report, continued M. Mühlig, of cholera statistics regarding many towns, and Munich among others. M. Mühlig had consulted the statistics of this town, but he had not found that it was said that public assistance had prevented the development of cholera. This, however, did not mean, that public assistance did not possess great advantages: only the Committee had gone too far: it was no less absolute than it had been when it had declared that the development of cholera might be prevented by applying treatment to choleraic diarrhœa on its first appearance. This diarrhœa, M. Mühlig thought, could not be treated so successfully as the Committee believed. For this reason he had signed the report under reserve.

M. Lenz opposed the following remarks to this reasoning. The efficacy of domiciliary visits was denied, when it was said that the diarrhœa cured by these visits would not have been followed by cholera, even if it had not been treated; while, on the contrary, diarrhœa, having a tendency to develop itself to a higher degree of cholera, would do so in spite of all preventive means. It would be difficult, in his opinion, to prove the contrary; while, in support of the thesis maintained by the Committee, he could himself quote many instances. He would confine himself to the following:—At London in the course of three weeks in 1849, 43,737 cases of diarrhœa were treated by means of domiciliary visits, 1,000 of these cases having a choleraic character (that is to say, the *dejecta* had the appearance of rice water); of all this number, 58 only degenerated into cholera. In fifteen large towns in England there were treated during the same year and in the same preventive manner, a total number of 130,000 cases of diarrhœa, not more than 250 of which were followed by cholera. (Tardieu *Dict. d' Hygiène, vol.* 3.)

But the objection could always be made, continued M. Lenz, that these figures proved nothing, that these 130,000 cases of diarrhœa were, in point of fact, excluding the 250, only cases of diarrhœa which had no tendency to degenerate into cholera. The following instance might, however, M. Lenz thought, militate sufficiently decidedly in favor of domiciliary visits. In Glasgow the mortality from cholera had been calculated with reference to the period when medical assistance had been offered to the sick. It appeared from this statement (in which there was no longer any question of premonitory diarrhœa, but of confirmed cholera,) that of all those who had received help within the first six hours after the commencement of the attack, a proportion of only 21 per cent. succumbed to the disease;

that those who were visited by the physicians between the sixth and twelfth hour after the commencement of the attack died at the rate of 33 per cent; and lastly, between the twelfth and twenty-fourth hour after attack, at the rate of 45 per cent. If assistance arrived later, the mortality was 66 per cent.*

M. Lenz concluded that the influence of prompt succour was fully proved by the figures given; and that therefore domiciliary visits, which tended to afford succour immediately on the appearance of the first symptoms of the disease, were fully justified.

M. Sawas, in reply to M. Mühlig's remarks, briefly refuted his views regarding premonitory diarrhœa, for after the speech made by M. Lenz, much was not left to him to say. M. Mühlig had placed himself in opposition to a doctrine now admitted by all practitioners. He (M. Sawas) himself had had occasion to treat hundreds of persons suffering from diarrhœa, who, thanks to the treatment applied against diarrhœa, had escaped cholera, even at the very height of a most murderous epidemic, like that of Constantinople last year. There was more than this, and within his own experience again. He had also seen hundreds of persons who were not seized by cholera until three, five, six, and even eight days after the appearance of the diarrhœa, and then simply from neglect. M. Sawas believed that what M. Mühlig proposed would be pernicious in practice, and could not but result badly.

M. Bykow pointed out that, according to M. Mühlig, it would follow that it would be easier to govern, so to speak, cholera after it attained the greatest intensity, than on its first stages.

M. Gomez thought himself bound, as a medical man, to support M. Mühlig. He believed with him that the importance of the treatment of choleraic diarrhœa, as a means of preventing the development of cholera, had been exaggerated. Frequently, said M. Gomez, simple cases of cholerine had been stopped, and it had been believed that serious cases of cholera had been arrested. This again was one of the consequences of not having properly marked one of the forms of the disease, that which did not go beyond the symptoms of diarrhœa, as had been done especially of late. But, added M. Gomez, though domiciliary visits were not so valuable as was tried to be made out, it sufficed that they could sometimes, if not always, prevent the development of cholera, to regard them as useful and advantageous. This, in fact, had really occurred; moreover, they would always be of advantage as a means of promptly caring for the sick, and of watching closely over every thing connected with the salubrity of the dwellings and the hygienic conditions of the population of a town. Domiciliary visits, concluded M. Gomez, had rendered, and were destined to render, very important services. Consequently the doctrine contained in the report was good, and should be maintained.

* Report of the General Board of Health on the epidemic cholera of 1848-49: London, 1850.

Dr. Goodeve was also of opinion that it was necessary to maintain the conclusion of the Committee, for it was based upon facts and corresponded with the teachings of experience. In many English regiments it was obligatory to combat diarrhœa immediately it made its appearance. Dr. Goodeve thought that M. Mühlig's opinion was too general, experience having demonstrated that even if success were not attained in preventing an attack of cholera, success might be had in stopping in time the diarrhœa which preceded it, in rendering it less violent and shortening its duration.

Be that as it might, whether the attack could be successfully arrested or not, in arresting the diarrhœa there would always be so much gained; for the diarrhœa, by being prolonged for three, five, or eight days, would weaken the patient, diminish his vital resistance, and the attack would find him exhausted and incapable, perhaps, of reaction, or of resisting the violence of the disease.

Not only, in Dr. Goodeve's opinion, had the Committee in no way exaggerated the rôle of preventive treatment, but it had stopped within the limits of the truth. If it had been so moderate upon this point, it was out of regard for the opinion of M. Mühlig, who, in Committee, had put forward the same objections.

M. Monlau, after having demonstrated the great importance of the facts quoted by M. Lenz, facts of a nature to show the great advantages that the poorer classes would derive from domiciliary visits, and from immediate treatment against diarrhœa, repeated what had been said by Dr. Goodeve, *viz.*, that the Committee, out of deference to M. Mühlig, had refrained from expressing itself so formally and so strongly as it ought to have done. In every way, these domiciliary visits, as had been very well remarked by M. Gomez, were very useful.

It was a fact, said M. Monlau, that nobody had unfortunately been able as yet to doubt that cholera was one of those diseases against which, as soon as they become confirmed, therapeutics were so weak, that it might be confessed, without exaggeration, that in the majority of instances, they remained entirely inefficacious. It was a reason the more, in his opinion, and action had always been taken in this direction, with regard to cholera more than any other disease, to act without loss of time and, so to say, in haste to surprise the disease in its beginning, and its precursory symptoms, if possible. It was therefore with this object in view that domiciliary visits had been proposed and employed with universally admitted utility. But to the great surprise of the Committee M. Mühlig had come forward to cast doubts upon their efficacy and almost upon their utility. Perhaps M. Mühlig had imperfectly interpreted the words of the Committee. M. Maccas could not explain the fact, except by supposing that M. Mühlig had not quite caught the meaning of the passage in the report where it was said *that these visits had even for their object* the prevention of the development of cholera. So long, said M. Maccas, as M. Mühlig could not bring forward scientific reasons in opposition to the asser-

tion of the Committee which insisted upon employing *domiciliary visits* in a *complete* and conscientious manner, M. Mühlig could not shake his belief in the efficacy of these domiciliary visits, which the Committee, however, did not consider as capable of preventing an epidemic, but, according to what was said in its report, able to save many persons and of diminishing the intensity of an epidemic, if its extinction could not be successfully attained. It followed, then, in his (M. Maccas') opinion, that the Committee hoped by these means to prevent the development and the extension of an epidemic, not to prevent an invasion of the disease.

Neither did M. Maccas hold the views entertained by M. Mühlig when he maintained that domiciliary visits had not been able, either at Constantinople or elsewhere, to arrest the invasion and extension of the disease, notwithstanding their simultaneous applications with other hygienic measures. M. Maccas pointed out to M. Mühlig that the hygienic condition of many quarters of this immense capital, and also of several cities of Europe, was not as satisfactory as could be wished, and that here, as well as elsewhere, the measures necessary to be undertaken in the matter were at their commencement rather than their termination. M. Maccas said that he could advance various arguments to prove the immense utility of domiciliary visits, but after all that had been said he did not think it necessary to do so. Everybody, he thought, was agreed upon the subject, including M. Mühlig himself, who had frequently expressed very just ideas on the nature of what were called *premonitory* diarrhœas. Consequently, M. Maccas would confine himself to reminding the Conference that if formerly domiciliary visits had been recommended in Europe, at a period when it was believed that they were a means of preventing the diarrhœas which were considered simply as affections predisposing to cholera, they should be recommended and employed with all the more reason at the present day. Who at the present day could doubt the efficacy of the speedy succour given by domiciliary visits to persons suffering from diarrhœa? And had it not been admitted that most of these diarrhœas, or at any rate a great portion of them, were cholera itself in a more or less mild form or in a not very advanced state?

In conclusion, M. Maccas said that a desire was evinced to rehabilitate the axiom that a disease must not be combated before its complete development.

M. Maccas was in favor of maintaining the article in the report as it stood.

M. Mühlig said he labored under the misfortune of being misunderstood. M. Maccas, however, had caught the meaning of his remarks. It was not that he was opposed to domiciliary visits—far from it,—only he (M. Mühlig) believed that no means existed of diminishing the intensity of an epidemic,—it could not be done by domiciliary visits any more than by other means. Up to the present, said M. Mühlig, facts had shown the powerlessness of such means, for

in all epidemics an ascending period had been seen which nothing could stop, and a descending period which proceeded by itself without the aid of any means. At Constantinople, M. Mühlig pointed out, there had been an extraordinary Commission last year which acted with as much energy as noise. It placed physicians every where, caused fumigations, domiciliary visits, and many other things, to be carried out; and yet, in spite of all that, the epidemic was more intense than it had ever been. M. Mühlig insisted upon this point, *viz.*, that he did not demand the suppression of domiciliary visits, but that there should be no exaggeration of the part they performed as prophylactic agents.

Dr. Goodeve said he would like to know whether the system pursued at Constantinople by the Commission mentioned by M. Mühlig was as complete as that proposed in the report, *i. e.*, whether under it daily search was made, as in England, in houses to ascertain the existence of diarrhœa, and to apply immediate treatment then and there to persons suffering under the disease. This was the only system by which happy results could be obtained, for it had been proved that the people did not have recourse in time to medical advice for what they considered to be simple diarrhœa. It should not be forgotten, said Dr. Goodeve, that the efficacy of domiciliary visits depended, as the Committee had taken pains to point out, on their methodical and constant employment.

M. Sawas, in reply to what had been said by M. Mühlig relative to the extraordinary Hygienic Commission of last year, said that he felt himself bound—leaving aside the epigrammatic spirit which had dictated the remarks, and which M. Sawas did not mean to regard as serious—to declare that that Commission had done a great deal of good. A hundred and fifty physicians employed by that Commission had unanimously declared—and it was only necessary to refer to their reports—that the recovery of those who had been saved was entirely owing to the immediate treatment against the premonitory diarrhœa. All these physicians had received strict instructions to be very attentive in their domiciliary visits, to spy out, so to say, the first premonitory manifestation of cholera, and to oppose the diarrhœa with energy as soon as it made its appearance. Experience, added M. Sawas, had sanctioned the efficacy of this practice which had rescued many victims from certain death. However, this discussion had been increased by the observations of M. Maccas and the explanations given by M. Mühlig himself. He agreed with M. Mühlig that domiciliary visits had not the power of definitively arresting a choleraic epidemic, but he believed nevertheless, with the Committee, that they could limit an epidemic and mitigate its violence, and that consequently they ought to be recommended.

M. Maccas added a few words more regarding disinfection. It was said in the Committee's report that disinfection ought to commence *with the commencement* of an invasion. He would prefer to say *with the approach* of an invasion. At the present day, he remarked, almost

all physicians agreed in saying that action should not be deferred until the outbreak of an epidemic, but that it was necessary to be forearmed against it, and that disinfection and other preventive measures should be carried out directly, it was learnt that there was an epidemic in the neighbourhood.

M. Gomez, and all the members of the Committee, accepted the change proposed by M. Maccas.

But M. Bosi remarked that though it might be unquestionable that disinfection as understood by M. Maccas, was an excellent general hygienic agent, this disinfection, according to the meaning of the Committee, was proposed with a different object. It was desired by its action to destroy the morbific germ, and this germ was not produced until after the first cases after the manifestation of cholera. As M. Maccas would have it, disinfection was very difficult of application, while it was very easily applied after the appearance of the first cases. In support of his assertion, M. Bosi quoted a fact which had come under his observation at Bologna during the epidemic of last year: in the hospital of that town there had been a rather heavy number of cholera patients, and there had been some also in private houses. Care was taken immediately to isolate the houses and the hospital, and the result was that at Bologna there were only 36 deaths from cholera, while the ravages of the scourge in other towns of Italy were great.

M. Pelikan called the attention of the honorable Conference to the recommendation made by the Committee to distribute copies of a book of popular *instructions*, and to draw up precise statistics, and write the history of the epidemic. He said he could not but approve such a project, but he thought it would be useful if the Committee were, like Pettenkofer and Griesinger, to lay down the bases of the instructions and the statistics it recommended. M. Pelikan proposed, therefore, that the Committee should prepare a sort of model for the *instructions* as well as for the statistics.

M. Monlau replied that as these instructions only referred to the dietetic regimen to be observed during the existence of an epidemic, they would be found in all treatises on hygiene, whence they might be extracted, with the modifications required by the peculiar circumstances of particular places. For instance, he said, there were localities which allowed with impunity the use of certain fruits and vegetables which in other localities could not be tolerated without very bad results. The Committee, he added, had thought it useless to give a model of the statistics it had proposed, because some excellent models existed; and because it believed that that duty did not belong to it.

At the general request, His Excellency the President put to the vote the text of the first part of the 5th chapter.

It was adopted unanimously.

With reference to the corollary of this part, M. Bosi remarked that a corollary ought to be the summing up of the most salient ideas

developed in the text. He would, therefore, like some words to be added to this corollary, touching isolation and disinfection, which were not mentioned. He thought they could come after the words, "the immediate assistance," &c.

M. Bartoletti said he wished that, instead of saying that all that constituted "very efficacious" hygienic and administrative measures, the words "very useful" were used.

M. Maccas, on the contrary, thought that, instead of lessening the force of the expression, it ought to have more strength imparted to it, as, for instance, by saying they were *the most efficacious* measures.

The Conference decided in favor of the expression used in the report.

The President put the corollary to the vote.

It was adopted unanimously.

The meeting terminated at 4-30 P. M.

Order of the day for the next meeting.

Continuation of the discussion of the report and appendix.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 27, OF THE 20TH AUGUST 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its 27th meeting at Galata-Serai on the 20th August 1866.

PRESENT :

For Austria :

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Medical Attaché to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium :

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain :

Dr. Monlau, Member of the Superior Spanish Council of Health

For France :

Dr. Fauvel, Sanitary Physician.

For Great Britain :

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece :

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy :

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

D. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands :

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia :

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia :

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Medical-Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(*For Egypt:*)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting was opened at noon.

The minutes of the 25th meeting were read by Baron de Collongue, one of the Secretaries, and adopted.

Dr. Mühlig pointed out the omission of his name in the list of members present at the 21st and 23rd meetings, the minutes of which had just been distributed. He wished the error to be recorded in the minutes.

The Conference then resumed the discussion of the report of the 1st Committee on the 3rd group. Count de Noidans read the second section of chapter V of this report.

Professor Bosi, referring to what was said in the report regarding the advantages or disadvantages of emigration, accordingly as it was carried out before or after the outbreak of cholera, asked whether it would not be establishing a dangerous principle to prohibit it in the latter case, because it might compromise the health of some places yet free from the disease, and increase the terror existing within the limits of the affected town, a town having forced relations beyond its limits, which rendered its complete isolation practically impossible. Professor Bosi believed that, so far from prohibiting even tardy emigration, it might, on the contrary, be encouraged under certain conditions. Could not the fugitives, for instance, be assigned a locality sufficiently removed, both from the town attacked by cholera and the surrounding localities, where they might undergo a sort of quarantine, before continuing their voyage? He thought there was no necessity to feel much anxiety about the moral effect that might be exercised upon a population already a prey to panic-terror, since the emigration would be the result of this very panic.

Dr. Monlau remarked that this quarantine that Professor Bosi proposed would be impracticable and impossible in the greater number of cases. The Committee did not require that tardy emigration should

be prohibited, it merely said that it was dangerous to those yet uninfected localities where the fugitives sought an asylum. At most it believed it to be of very little advantage to these fugitives who left in bad moral condition, and also that flight but too often did not secure them from the attacks of the disease. As for the moral effect produced, it must always be taken into consideration, for those who emigrated always belonged to the well-to-do classes, and their departure cast discouragement over the less fortunate part of the population, which could not follow their example.

In support of the observations contained in the report regarding tardy emigration, Dr. Salem Bey quoted the facts observed in Egypt and notably at Cairo, during the last epidemic.

Dr. Gomez said he did not himself believe that land quarantines were possible; it was a question, however, for the consideration of the Committee appointed to consider quarantine measures. As for emigration, it must be recommended previous to the manifestation of cholera; after an outbreak of the disease, it evidently became dangerous to the places where the emigrants sought refuge. If there could be no question of preventing it, an idea which could not have been entertained by the Committee, it was not the less its duty to point out this danger.

Professor Bosi having stated that, after these explanations, he would not insist upon his remarks, he put to the vote the conclusion of chapter V. The text and conclusion were successively adopted unanimously.

The adoption of the text of chapter VI gave rise to no remarks.

Not so, however, with the conclusion, which Dr. Bartoletti did not think sufficiently affirmative. The epithet *efficacious*, which he criticised in the conclusion of chapter IV, when the question was under discussion of the sanitation of towns as a preventive means to be opposed to the reception of cholera, it seemed to him ought to have been used there. It was asserted that measures of disinfection, by means of ventilation, washing, and chemical processes, combined with isolation, destroyed the choleraic germ. To say that they were *powerful* auxiliaries was not sufficient.

Dr. Mühlig and Dr. Maccas replied that no affirmative dictum could be pronounced in the present state of science: if the works that treated of measures of disinfection were consulted, it would be seen how difficult of application they were. Science had not said its last word—nothing should be affirmed of which there was as yet no certainty.

Dr. Sawas concurred in this view.

Dr. Bykow asked whether it could be affirmed, when the choleraic germ had been destroyed by disinfection combined with isolation, that the destruction was positively the effect of the application of these measures? Could anybody be sure that the germ which, according to the general notion, had only a brief existence, did not become extinct of itself during the period of quarantine?

The continuation of the discussion was adjourned on the motion of Dr. Fauvel, who pointed out that it would be more usefully continued when the report drawn up by Dr. Mühlig upon *disinfection* came under consideration.

Count de Noidans commenced reading that report.

The 1st paragraph was adopted without remark.

Dr. Pelikan criticised the classification of disinfectants and the distinction made in the report (paragraph 2) between them in regard to their mode of action. Dr. Pelikan stated particularly that he could not agree in opinion with Dr. Mühlig as to the *corrosive action* of disinfecting agents for choleraic stools. He thought that Dr. Mühlig's hypothesis was not founded upon such solid bases as to be recommended by the Conference as the most conclusive.

Dr. Mühlig believed that it was necessary to avoid scientific discussions with which the Conference had no business. He confined himself, therefore, to replying that he had not meant to make a classification of disinfectants. The report only mentioned the various means of disinfection mentioned by authors who had taken up these questions.

Dr. Bykow disputed the important rôle attributed by the report to ammoniacal exhalations in the production of typhus, typhoid fever, and cholera, and he affirmed that the only danger that existed was in the fermentation of *excreta*.

Dr. Fauvel thought that, in a sanitary point of view, everything having the effect of destroying the morbific germ ought to be regarded as a disinfectant. The whole question was to find disinfectants by means of which this result could be arrived at without injury to the substance to be disinfected. Classifications were always incomplete, and time should not be wasted upon them; what was important and what was specially difficult, was the application of the various means of disinfection: one could always destroy, but one could not always apply.

Dr. Mühlig believed that it was going too far to affirm that everything could be disinfected: that was a point that had not yet been demonstrated.

Dr. Sawas would not admit that the distinction made by the report between the various chemical means of disinfection was scientifically exact: *causticity* was there presented as a separate mode of disinfection by itself. Now, in his opinion, it was nothing but a quality of certain chemical agents, a result of the play of affinities.

Paragraph 2 was put to the vote and adopted by all but M. Pelikan, who declined to vote.

After remarking that the facts quoted in paragraph 3 appeared to be conclusive proofs of the efficacy of disinfectants, Dr. Fauvel wanted to know how it was that the report could have hesitated to affirm this efficacy: did any contrary facts exist?

Dr. Mühlig replied that he believed in the power of measures of disinfection: only the facts that proved it were not numerous enough to permit of an absolute opinion being pronounced.

Paragraph 3 was adopted unanimously.

Similarly with the first section of paragraph 4 regarding *aeration*.

With reference to the 2nd section of the same paragraph, Dr. Fauvel expressed his regret that the report had not said more about such an important question as that of *calorification*. If the use of calorification could be made general, and it could be successfully used without destroying the substance to be disinfected, an immense result would have been obtained, and the disinfectant, *par excellence*, would have been found. Without going so far, could not the choleraic germ be destroyed by a temperature less elevated than that employed by Dr. Henry, of Manchester? This was a question deserving of very special consideration. If the reply was in the affirmative, would it not be in fact a valuable means of disinfection for a crowd of substances, and an agent of easy application, especially on board ships, particularly steamers, for linen, clothes, baggage, and even certain kinds of merchandise.

Dr. Mühlig replied that he understood, like Dr. Fauvel, all the importance of calorification as a disinfectant; but he was not aware of any cases in which this means of disinfection had been applied against cholera. In spite of all his researches, he had found no other facts to quote but those reported in the note to page 6, and there only the plague and scarlatina were referred to.

Dr. Millingen considered immersion in boiling water or in steam to be an eminently efficacious means of disinfection; but no mention of it was made in the paragraph relating to *calorification*, where it should naturally have been placed, nor did he find it alluded to in the subsequent paragraph, which treated merely of immersion in cold water.

Dr. Goodeve preferred immersion in cold water, but mixed with disinfecting substances. Immersion, which was efficacious if the water was boiling, ceased to be so if it were only hot, and then it even became rather dangerous; the temperature in this case was not sufficiently elevated to destroy the morbific germ, and it was to be feared that the germ would spread with the steam evolved. Many persons attributed to this cause the numerous cases of cholera that had been observed among the washerwomen by whom the linen and other clothes of cholera patients were washed.

The 3rd section was adopted unanimously.

Dr. Pelikan passed in review the various chemical processes of disinfection enumerated in the 4th section. He approved what was said regarding the good results of the use of chlorine, but as to chlorides, he did not agree in opinion with Dr. Mühlig. Neither did he admit the preference given by the report to chloride of zinc over sulphate of iron.

This last disinfectant, which was recommended by its cheapness, had afforded the best results in Russia and in France, especially when mixed with pyroligneous acid.

Dr. Pelikan also opposed Dr. Mühlig's views regarding the difference existing between chloride of zinc and sulphate of iron in the point of view of the disinfection of excreta. In his opinion, sulphate of iron, and similarly other metallic salts, were not able to disinfect excrement completely after putrid decomposition had commenced. Dr. Pelikan recommended chloride of magnesia, to which no allusion was made in the report, as a cheap disinfecting agent, which could easily be procured near manufactories of chlorine; he pointed out, in conclusion, a typographical error of frequent occurrence in the report, *viz.*, the printing of the word *hypochlorite* for *hypochloride*.

Dr. Sotto thought the great defect in the report was the absence of facts. For his own part, he had successfully employed sulphate of iron in the Austrian hospital, as well as on board Lloyds' ships, during the last epidemic. At the Austrian hospital, there had been 102 cholera patients, and where want of space prevented him from assigning them sufficiently separate compartments, none of the other patients, who amounted to thirty in number, or of the twelve hospital attendants, were attacked.

Dr. Mühlig replied that if he had not quoted more facts, it was unhappily because he knew of no others. At the Prussian hospital sulphate of iron had been employed for the disinfection of the cess-pits and excrementitious matter, and chloride of lime for that of linen.

The 4th section was adopted unanimously, except by Dr. Pelikan, who declined to vote.

The meeting terminated at 4-30 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

Dated 3rd December, 1866.

From—E. HAMMOND, ESQ.,

To—The Under-Secretary of State for India.

I am directed by Lord Stanley to transmit to you, to be laid before Lord Cranborne, a copy of a Despatch from Dr. Dickson, enclosing copies of Protocols Nos. 28 and 29 of the Proceedings of the Cholera Conference at Constantinople.

No. 41, dated 21st November, 1866.

From—DOCTOR E. DICKSON,

To—LORD STANLEY, M. P.

I have the honor to enclose herewith triple copies of Protocols Nos. 28 and 29.

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 28, OF THE 23RD AUGUST 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its twenty-eighth meeting on the 23rd August 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

For Spain:

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to H. B. M.'s Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of H. M. the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

For Egypt:

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The Secretaries read the minutes of the last two meetings: Dr. Naranzi those of the meeting of the 18th, and Baron de Collongue those of the meeting of the 20th August. They were unanimously approved.

M. Lenz informed the members that M. Segovia, President of the first Committee, being prevented by indisposition from attending the meeting, had deputed him to present and lay on the table the additional note to the text of chapter VIII (Naval Hygiene) of the Report on measures of hygiene.

M. Lenz expressed the wish of the Committee that this additional note should be placed in the order of the day with a view to its immediate discussion if time should permit. The proposal was agreed to.

M. de Lallemand made a motion regarding the communication which, in concert with his colleague Dr. Fauvel, he had made to the Conference on the 31st May. The object of that communication being the reform of the sanitary tariff, it had been adjourned in order to give the Delegates time to provide themselves with instructions from their respective Governments. Eighty days had elapsed since then—more than sufficient time, he thought, to ask for and receive any instructions thought necessary. As the Conference had recorded his communication, he gave notice that he proposed to make a motion, at the next meeting, with a view of ascertaining whether the Conference would consent to nominate a Committee to consider the question of the reform of the tariff.

The President proceeded to the order of the day, calling on M. Mühlig to continue the reading of the Appendix concerning disinfection as applied to cholera.

M. Mühlig, after having reminded the meeting that the reading had been interrupted at the last meeting at the 5th Section, resumed the reading at page 11.

He stopped at page 12, at the disinfection of drinking water, to listen to the remarks of the speakers.

M. Pelikan noticed a contradiction which, in his opinion, existed between what was said at the end of the 10th page and what was maintained at the commencement of the eleventh. He would wish to know whether M. Mühlig's assertions were based on a chemical theory, whether it was chemistry or practical experience that had revealed to him the action of the coal tar and the substances he praised. M. Pelikan thought that chemistry as well as practice had demonstrated the contrary. Thus for instance, in France, far from dreading mixture of certain acids with disinfecting salts, a successful use was made of pyroligneous acid mixed with sulphate of iron.

M. Pelikan remarked that he only made these observations with a view to being precise, and so as not to lead those who had no chemical knowledge into error.

M. Mühlig replied to M. Pelikan's remarks. The Committee, he said, did not deny that many agents might be successfully applied, and that their action might be rendered more intense by judicious mixtures.

But it recommended that mixtures which neutralised each other should not be used : that was all that M. Mühlig had meant to say. He did not think there was any contradiction in the passages quoted by M. Pelikan ; he would, however, point out to him that the employment of chemical agents would not suffice to disinfect linen, stuffs, &c., for instance. If linen were immersed in a solution of chloride of zinc, is it thought that it would be purified by that immersion alone ? No, aeration, &c., were also required. That was what, in the opinion of the reporter, constituted a method of disinfection.

M. Pelikan confessed that M. Mühlig had explained himself more clearly now than he had done in his Appendix.

M. Gomez said that the idea of the author of the Appendix was correct, but that it had not been quite properly rendered, as set forth in the text.

In France, said M. Gomez, chloride of zinc was no longer considered to be the best of disinfectants, for it had been discovered that it could not neutralise gases, and phenic acid mixed with sulphate of iron was employed with greater confidence.

Mr. Gomez was of opinion that, on reading the entire paragraph, M. Pelikan's remarks lost their force ; but that they were strictly correct if all that were looked to was the recommendation of the author to employ but the one agent only in the fear of making mixtures capable of neutralising each other. That might lead to error, if it were not seen further on that it was stated that it was necessary to avoid mixtures of substances having opposite actions. The Committee recommended mixtures which did not neutralise each other, and the action of the substances composing which was one and the same.

M. Millingen asked for explanations regarding the difference established in page 11 of the Appendix between choleraic *dejecta* and choleraic vomited matter. He thought, and to his thinking it had been clearly shown in the general report, that both of them furnished the choleraic *germ*. He therefore desired the elimination of the word "*perhaps*" in connexion with vomited matter.

M. Mühlig replied that it was exactly because he wished to conform to the spirit of the general report, and also to the prevailing opinion, that he had used the word "*perhaps*" in connexion with vomited matter. It was positively known that choleraic *dejecta* contained the *germ*, but a decision could not be pronounced so categorically with regard to vomited matter, for the thing had not been proved, though the fact seemed very probable. However that might be, the Appendix was written for physicians, who knew what they were about.

Dr. Goodeve thought that the last paragraph of the 5th section should be expressed with greater precision. He referred to the following passage :—"The disinfection of the latrines and sewers of a locality will be commenced, therefore, directly it is threatened with an "invasion of cholera." Dr. Goodeve would wish that the following

addition should be made to it :—" Especially if it were not done when " the number of cases of diarrhœa commenced to increase."

The 5th chapter was put to the vote and unanimously adopted with the addition proposed by Dr. Goodeve.

M. Mühlig continued to read as far as the end of the 14th page.

M. Gomez remarked that at page 13 the author recommended fumigations, and indicated the manner of employing them. But this doctrine was contradicted in several passages of the Appendix ; in the 4th section for instance, said M. Gomez, the author asserted that fumigations were of very doubtful efficacy, and the report almost condemned fumigations, or reduced them to very little, by disputing their value. It was but too true that it would be an exaggeration altogether to dispute the value of fumigations, for, well employed, they were somewhat efficacious auxiliary agents. M. Gomez would remove these minor contradictions existing, with some others, in the Appendix, and he thought it would be necessary, by changing the wording, to make all the passages referring to the same doctrine harmonise. With the object of making the most rigorous scientific precision prevail in the Appendix, he desired the change of the following expression :—" Phenic acid contains a mordant," (page 9). Phenic acid, said M. Gomez, does not contain any mordant, though it is one itself, *i. e.*, it is capable of exercising a biting action on vegetable fibre. To contain a mordant meant, in his opinion, to enclose, to keep latent, a mordant principle, but the chemical composition of phenic acid was well known, and an analysis in no way demonstrated the existence of a distinct principle.

The word 'contain,' M. Fauvel thought, meant nothing else than that phenic acid, the elementary composition of which only was known, was a substance which had a mordant action on vegetable on organic fibre. But it might happen that phenic acid also contained an element or principle of a mordant nature, in the same way as tan, which, by a special principle, tannic acid acted on organic substances in tanning them.

M. Gomez replied that if the French language gave to the word *recéler* (to contain) the same meaning as M. Fauvel, who was very competent, gave it, it was not so in chemistry ; the word there, he thought, had quite another signification.

M. Mühlig, in reply to M. Gomez, confessed that he could not find the contradictions pointed out by him in the Appendix. Down to a certain period, he said, it had been deemed sufficient to fumigate in order to purify, and then great confidence was felt in sulphur. Greater scepticism existed at the present day—absolute confidence was no longer placed in fumigations, whatever might be their nature, for it had been seen that along with fumigations it was necessary to employ other agents, aeration for instance, washing with lime, &c. Consequently, it was desired to limit them to the part they could perform. With regard to the expression condemned by M. Gomez, an expression, after all, borrowed from a treatise written by a Frenchman, M. Mühlig altogether agreed with M. Fauvel.

M. Pelikan was of opinion that the means recommended by M. Mühlig for the purification of dwellings (page 13) where it was said that the entire interior of the house, walls, ceilings, and floors, should be first sprinkled and then washed with a solution of chloride of lime or phenic acid, showed confusion and could not constitute a real method of disinfection. M. Pelikan would ask M. Mühlig whether he had ever practised the operation himself. If it had been taken from some author, he had not taken sufficient pains to subject it to a severe chemical test. Why, he would again ask, have recourse to gaseous lime (Guytonian fumigations) and to sulphurous acid after the employment of chlorides or phenic acid? If the agents proposed by M. Mühlig were not sufficient, surely sulphurous acid, which, to his thinking, was a much less efficient agent than the former, could not be recommended. M. Pelikan asserted that, with regard to disinfection, as to every other chemical operation, the question was not to propose many substances to be employed without distinction. Science prescribed the methodical use of those the value of which was certain, and the selection and acquisition of which was easy, and which were least compromising to health.

M. Pelikan also found that M. Mühlig (at page 14) in proposing different methods for the disinfection of merchandise, commenced by recommending aeration, and then passed on to chemical disinfectants without mentioning *immersion*, an operation which, as every body knew, might, under certain circumstances, be very useful. Neither did M. Mühlig speak of merchandise which, according to the quarantine regulations in force, ought to be destroyed by combustion, for instance, or thrown into water, such as animal and vegetable organic substances in decomposition, provisions, &c.

As for M. Mühlig's proposal to subject certain merchandise (except drills and rags, to which M. Mühlig had devoted a separate paragraph (see Appendix, page 13), M. Pelikan did not understand what the goods were which might be plunged into a solution of chloride of zinc without running a risk of deterioration. M. Pelikan believed that such a practice did not even deserve to be made the subject of serious remark; and no Government, he thought, would care to adopt the suggestions of the Conference if such methods were proposed and recommended by it. However, said M. Pelikan in conclusion, the question of disinfection of merchandise was included, by the decision of the Conference, in the programme of the Committee on quarantine measures, and that Committee, of which M. Pelikan was a member, would, he said, soon have the honor of submitting for the appreciation of the Conference the same question treated in all desirable detail.

M. Salem Bey, while he expressed his concurrence with M. Mühlig, would wish, however, at the same time, that a distinction should be made in the Appendix between merchandise of various kinds relatively to the means of purifying them.

M. Bartoletti was of opinion that it would be altogether superfluous to insert such a distinction in the Appendix, the question would be disposed of by another Committee.

M. Salem Bey then withdrew his motion.

M. Maccas thought it necessary to specify in the Appendix the cases and the nature of the merchandise which might be disinfected by chloride of zinc. This substance, he remarked, was very costly. As these cases were not specified in the Appendix, M. Maccas proposed the omission of chloride of zinc from among the disinfectants of merchandise.

M. Fauvel made a simple observation on this subject: Many Delegates, he said, had declared war against chloride of zinc, but without clearly explaining why. Did they consider it as a good or bad agent? It was necessary to prove it to be bad before proscribing it. Now, experiments that had been made had proved that it was a very efficacious agent. Why then should they wish to do away with it? There was, added M. Fauvel, an understood condition, which was that it was provided it did not destroy or deteriorate merchandise, a condition which was also understood in regard to other agents.

This part of the Appendix, as far as the *disinfection of ships*, was put to the vote and adopted unanimously, with the exception of MM. Maccas and Sotto, who abstained from voting.

M. Maccas explained why he had abstained from voting. After all the explanations that had been required, he said, all that had been done was to put rags forward, without naming other merchandise adapted to be disinfected by chloride of zinc. This was far from satisfactory.

M. Sotto also said that he had refrained from voting for the same reasons.

M. Mühlig proceeded with the reading of the Appendix to its conclusion. It was adopted unanimously.

M. Fauvel asked for some explanations regarding the first part of the conclusion. How could disinfection diminish the receptivity of a locality menaced by cholera? He understood that that might be done by hygiene, but he could not conceive that disinfectants, the only action of which was the destruction of morbific matter, could afford the same result.

M. Mühlig replied that disinfectants, as had been said in the commencement of the Appendix, might be considered in two distinct points of view: They might be employed to destroy the morbific germ, and also to prevent the evolution of gases, to destroy putrid emanations. Now, it was in this latter sense that it was said that, if they were employed before the manifestation of the epidemic, they might diminish the receptivity of a locality menaced by cholera. In support of his assertion, M. Mühlig mentioned a fact relative to the town of Ulm, where, every disinfecting agent having been employed before the manifestation of the epidemic, the ravages of cholera were very slight.

M. Sotto wanted to know whether, under the denomination of *locality*, the author of the Appendix meant to speak of a hospital, of a quarter, as well as of an entire town. He desired very much to know whether the Committee knew of any town which had been purified by

disinfectants? He was of opinion that the passage ought to be eliminated, or so modified as to clearly show the signification of the word *locality*. Experience, he thought, had not yet demonstrated the possibility of purifying an entire town by means of disinfectants.

M. Mühlig reminded M. Sotto that he had just quoted the town of Ulm which had felt the influence of the disinfecting agents employed. The word *locality* might, therefore, he thought, be retained without occasioning any erroneous impression. At the same time, however, he said the word had been used to designate great establishments without distinction, such, for instance, as hospitals, prisons, &c. In connexion with this subject, M. Mühlig mentioned the fact relative to a prison in Munich, which had been guaranteed against cholera by disinfecting agents.

His Excellency the President put the conclusion to the vote.

It was adopted unanimously.

M. Gomez asked permission to make a few technical remarks relative to the Appendix as a whole.

At page 8 there was an omission regarding Smith's method of nitric fumigations. The author of the Appendix had indicated the proportion of the substances to be mixed in order to obtain the evolution of the vapors of nitrous acid, but he had omitted to state the dose necessary for the disinfection of a given space.

At page 9, continued M. Gomez, it was said that American surgeons disinfected the air of apartments by the evaporation of pieces of cloth steeped in a strong solution of permanganate of potassium. The permanganate of potassium was, no doubt, a very energetic agent in the neutralisation or destruction of putrid organic emanations. It had been made use of as an excellent test to appreciate the degree of impurity in air vitiated by organic matter suspended or dissolved in the atmosphere, and it was for this reason that it had been recommended as a purifying agent. Permanganate of potassium, however, not being a volatile substance capable of spreading through the air by evaporation and thus reaching the infecting matter, it was necessary to establish a suitable current in order that the air might successively present this matter to the action of the permanganate of potassium. The recommendation, therefore, to employ the evaporation of a concentrated solution of this salt to purify the air of houses badly expressed the value of the process to be followed, and it was desirable that the expression should be more distinctly given.

M. Mühlig confined himself, in replying, to saying that the process, as described by him, had been applied in America. He mentioned the fact as he had found it recorded in an American Medical Gazette, without offering any opinion upon its value. As for the passage relating to Smith's fumigations, the word "grammes" should be added after the figure 15.

M. Bykow brought to notice a typographical error: in two places in the Appendix "hypochloride of soda" had been printed for "hypochlorate of soda."

M. Bosi asked the Conference whether the Report which had just been read and approved would, like the general report, be reprinted with the modifications adopted by the Conference shown in notes. He thought that was necessary, because, in the first place, the Conference had decided in that view when it authorised the reprinting of the general report, thus establishing a precedent and a formality which should be respected; and because, in the second place, the report in question consisted of three separate parts, *viz.*, the Report, the Appendix, and the additional note. All these, he thought, should make one single report, and, as each could not exist separately, the reprinting of the whole was absolutely necessary.

M. Fauvel pointed out that the general report had been reprinted because only 250 copies of it had been struck off; and it had not been printed as an annexure in the same shape and size as the minutes of proceedings. In regard to the report spoken of by M. Bosi, the Committee had taken care to print it as an annexure in the same style as the proceedings, and 650 copies of it had been printed. Independently of that, with the exception of some slight changes easily to be found in the proceedings, it had been adopted almost as it stood.

He (M. Fauvel) was of opinion that it would be useless to reprint it.

M. Bartoletti was of the same opinion.

M. Keun said that M. Bosi's remarks were founded on a precedent established by the Conference; but with a view to meet the remarks of those who had urged the material difficulties in the way, he proposed that all the modifications of the report should be collected together, and added, in one page or several, if necessary, to the report in question.

M. de Lallemand remarked to M. Keun that if that were done, the minutes of the proceedings would lose much of their interest, and would no longer be of any use or purpose. They were only interesting for the discussions which were reported in detal.

M. Lenz expressed his concurrence with M. de Lallemand, and all the more willingly, he said, that it was necessary not to forget that the reports were drawn up by the Committees of the Conference, and not by the Conference itself.

M. Bartoletti thought the discussion altogether useless. On the termination of its labors, the Conference might, if it thought it necessary, make a *résumé* of them, and similarly after the reports of the three Committees, an abridgment might be drawn up of the principal points adopted by the Conference. This, said M. Bartoletti, was the mode of procedure adopted in other Conferences.

M. Maccas expressed his concurrence in M. Bartoletti's views.

M. Bosi accepted M. Keun's proposal.

His Excellency the President consulted the Conference.

It was decided that the report of the first Committee should not be reprinted.

M. de Lallemand proposed that they should proceed to the discussion of the additional note.

M. Maccas seconded the motion.

His Excellency observed that the hour was rather late, and postponed the reading and discussion to the next meeting.

The meeting terminated at 4-15 P. M.

Order of the day for the next meeting.

1*st*.—Reading and discussion of the additional note.

M. de Lallemand's motion regarding the reform of the sanitary tariff.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 29, OF THE 25TH AUGUST 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its twenty-ninth meeting on the 25th August 1866, at Galata-Serai.

PRESENT :

For Austria :

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty the Emperor of Austria.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium :

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

For Spain :

Don Antonio Maria Segovia, Consul-General, Chargé d' Affaires.
Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States :

Dr. Ignace Spadaro.

For France :

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain :

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece :

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy :

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands :

M. Keun, Councillor to the Legation of H. M. the King of Holland.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia :

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia :

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway :

M. Oluf Stenersen, Chamberlain to H. M. the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey :

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt :)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

The minutes of the 28th meeting were read by Dr. Naranzi and adopted with some modifications.

Count de Lallemand, as President of the Committee appointed to consider the measures to be taken in the East with a view to prevent the recurrence of the invasion of Europe by cholera, laid the Report of the Committee on the table (*annexure to the present minutes*).

Its discussion was placed on the order of the day for the meeting of Monday the 27th August.

Dr. Lenz read the note which, in its meeting of the 16th August, the Conference had deemed necessary to add to chapter II *(Naval Hygiene)* of the report on the hygienic measures to be adopted with a view to preservation against cholera.

With reference to paragraph 3 (*quality of ship's provisions)* of the section of this note relative to the *sanitary police at departure,* Dr. Sotto invited the attention of the Conference to the question of the provisions for a ship's crew. Salted meat was still used on board a certain number of ships. It ought not to be used in seasons of epidemics, and the use of fresh meat should be recommended, at least in short voyages.

Dr. Bykow believed that in paragraph 4 of the section on the *sanitary police of the voyage* it would have been well, after the recommendation to maintain the cleanliness of the latrines, to insist upon their number being proportionate to that of the passengers. Last year, during

the epidemic, one of the ships of the Russian Navigation Company had on board 600 deck passengers. The only two latrines devoted to these passengers being literally besieged, it was impossible to keep them clean and disinfect them. Cases of cholerine occurred, and it was found necessary to run up temporary latrines. The cases of cholerine immediately ceased. Dr. Bykow had received his information from the captain of the ship in which the thing happened.

Dr. Fauvel thought that in the same section of the *sanitary police of the voyage*, after the advice to employ aeration as a means of disinfection of articles of personal use, it would have been interesting to speak also of calorification. Could not a sort of stove be set up on board steamers in communication with the engine in which soiled articles might be subjected to the action of steam? It was a question which had already occupied the Conference, by which it had been thought worthy of consideration.

As Drs. Sotto, Bykow and Fauvel confined themselves to requesting that the preceding remarks might be recorded in the minutes, His Excellency the President put to the vote the additional note intended to complete chapter II of the Report of the first Committee. It was adopted unanimously.

The conclusion of this chapter, the vote on which had been adjourned (*see* minute No. 25) was also adopted unanimously, with the exception of four members, who abstained from voting (Dr. Millingen, Baron Testa, Dr. Mühlig, and Dr. Salem Bey.)

On the motion of Dr. Dickson, a vote of thanks was accorded to Dr. Monlau, Reporter of the first Committee, and the members of the Committee.

Count de Lallemand, in accordance with the notice given by him at the last meeting, again brought forward the question of the reform of the tariff of sanitary dues in the Ottoman ports. Count de Lallemand, referring to his communication of the 31st May, asked for the appointment of a Committee to consider the question on the bases indicated in the said communication.

M. Vetsera announced that, in consequence of the communication made by Count de Lallemand at the meeting of the 31st May, he had requested instructions from Vienna as to whether the Imperial Government did or did not consider the Delegates in the Conference competent to discuss the tariff of quarantine dues in the Ottoman ports. The Imperial Government having replied in the negative, M. Vetsera declared that neither he nor his colleague, Dr. Sotto, were at liberty to take any part in any discussion which might ensue upon the question.

M. Vernoni announced that the Italian Delegates had received similar instructions. The Royal Legation had, moreover, been directed to go into the matter in direct communication with the Sublime Porte, and there was reason to hope that a satisfactory solution would soon be arrived at.

Dr. Goodeve stated that the British Delegates also were not authorised to discuss the question.

Dr. Maccas made the same declaration with regard to the Greek Delegates.

Dr. Pelikan had not yet received the instructions which he had at once asked for from St. Petersburg.

Dr. Millingen stated that the Dutch Delegates were similarly situated.

Baron Testa (for Prussia), Dr. Sawas (for Persia), M. Stenersen (for Sweden and Norway), Dr. Gomez (for Portugal), M. Segovia (for Spain), Count de Noidans (for Belgium), Dr. Spadaro (for the Holy See), stated, on the other hand, that they were authorised by their Governments to take part in the discussion.

H. E. Salih Effendi reminded the Conference that the revenues of the Turkish Sanitary Administration only amounted to a fourth of the expenditure, and that it was impossible that the treasury of the Empire could support such a heavy burden any longer. Two sorts of measures had to be employed with a view to preservation against the invasions of the Asiatic scourge: quarantine measures and measures of hygiene, both of them necessitating heavy expenditure. Now Turkey had not only to preserve herself, but also by reason of her geographical position, to preserve Europe. These considerations, and others, to which H. E. Salih Effendi considered it unnecessary to revert, rendered it indispensable that the sanitary dues now levied in the ports of the Empire should be augmented. It was necessary that these dues should be made to harmonise with the expenditure by which all Europe profited, if it was desired to place Turkey in a position to execute the sanitary measures, the elaboration of which was the object of the Conference.

M. Segovia remarked that the Conference was in an unfavorable position for the discussion of such a serious question. The recommendations it might urge would lose much of their value, if, for one reason or another, the Delegates of many Powers, and especially those of such Powers as England, Greece, Russia, Austria, and Italy, which, on account of their importance and their shipping, were the most interested, were not to take part in the discussion. He would also ask on what bases they could calculate the quota of the dues to be levied without interfering with the details of the Turkish administration, which it was not within the province of the Conference to do. Spain admitted, in principle, the justice and the necessity of increasing the dues now levied, but, like some others of the Powers represented in the Conference, she had not, so to say, any maritime relations with Turkey. What authority would the Delegates go upon in discussing the question of figures? Did they possess data sufficient to enable them to enter upon the discussion with a perfect knowledge of the matter? He did not believe so.

Dr. Fauvel did not admit the distinction which M. Segovia tried to establish in such a matter between the different Powers, on account

of the importance of their shipping. The decisions of the Conference had always been guided by the majority of votes of the Delegates present, leaving altogether out of the question the Powers they represented, still more the importance of those Powers. The vote of every Delegate had and ought to have the same value. Now, if the number of those who admitted the competence of the Conference were counted, it would be seen that it exceeded the number of those who abstained, without taking into consideration that, amongst the latter, there were some whose abstention was occasioned merely by the want of instructions. The value of the votes in the present case could less than ever be calculated according to the importance of the commerce. The charges should be proportioned to the profits, and if the maritime commerce of Turkey was in the hands of a few Powers only, these Powers would find advantages in the change which could not be placed in comparison with the very slight prejudice which the increase of clearly insufficient dues might cause to them. Dr. Fauvel finally reminded the Conference that the matter in question was not simply the protection of Turkey, but that of all Europe, and that, in this point of view, all the Powers of Europe were equally interested in the possession by Turkey of a good sanitary organisation.

Dr. Sawas seconded these remarks. The receipts of the sanitary administration, it was well known, covered only a fourth of the expenditure. To enable it to continue in working order, it was indispensable that such a state of things should be remedied. When an object was to be attained, the means of attaining it must be provided. The Persian Delegates, moreover, had a right to make themselves heard in such a discussion. Their country, it was true, possessed no ships frequenting the Ottoman ports, but all the merchandise going into Persia passed through Turkey. If the sanitary dues were raised, the freight of the ships carrying these goods would increase in proportion, and, consequently, so would the price of the merchandise itself. Persia, therefore, in this point of view, was interested in the question.

Dr. Salem Bey believed that the considerations just brought forward had sufficiently shown the necessity of a reform in the Turkish sanitary tariff, to justify the propriety of insisting upon the point. It was known with what eagerness, and at how many sacrifices, the Egyptian Government had this year, on the return of the pilgrims from Mecca, applied the measures of precaution recommended by the Conference, and it was only just to look to the means of making the receipts of the sanitary administration balance the fresh charges which it would now have to bear in the interest of all.

Professor Bosi did not think it could be denied that the maritime Powers whose ships would have to pay the dues, the increase of which was under discussion, were really the only ones interested in the question. When a sanitary department was organised in Turkey in 1838, the maritime Powers were, in every case, the only ones which interfered in the negotiations for fixing the tariff. The Italian Government had also thought, like the other Governments which had

given instructions to their Delegates not to take part in the discussion, and these Powers were those which contributed most to the maritime movement of the Ottoman ports—that a Conference in which there were Delegates from Powers having no shipping in the Levant was competent when the question was raised of imposing a new duty on foreign shipping. The decisions of the fraction of the Conference, which voted for its competence, evidently could not be binding on the Governments whose Delegates abstained from taking part in the discussion.

Count de Lallemand replied to Professor Bosi that the interested parties should certainly be heard, but it was going too far to pretend that they alone ought to be the judges in the matter. Reverting then to the remark previously made by M. Segovia, that the Conference was not possessed of the information requisite for taking the question up with a perfect knowledge of all its bearings, Count de Lallemand pointed out that this information was partly in its possession, and that in any case it would be easy to procure the rest. The Conference might, besides, assure itself of the insufficiency of the sanitary dues laid down in the Ottoman tariff merely by comparing them with the dues levied in the ports of the other States of Europe. This was the most simple, and at the same time the most convincing, manner of arriving at the truth.

Dr. Sawas requested the immediate appointment of a Committee. The majority of the Conference having decided the question of competence, no further discussion could take place.

M. Vernoni did not admit that the instructions given by certain Governments to their Delegates sufficed to establish the competence of the Conference.

Dr. Monlau thought the appointment of a Committee useless. The insufficiency of the tariff of the Ottoman sanitary dues was a fact sufficiently demonstrated to permit the Conference to state its opinion at once. Every thing touching upon internal administration was, besides, beyond its province; and it could not, therefore, enter upon the details of the question. The Spanish Delegates would vote only upon the principle of the augmentation of the tariff, expressing a desire that the settlement of the affair might be accelerated as much as possible.

Dr. Fauvel said that this was exactly tantamount to not having any thing to say in the matter. Every body admitted that it was right to increase the present tariff;—what was asked of the Conference was exactly to consider the proposed new tariff in all its details.

M. Keun stated that, not having yet received the instructions for which he had asked, he had not been able to take part in the discussion, and he even thought himself bound to protest in advance against every decision that might be adopted, in the event of his Government not admitting the competence of the Conference. For his own part, Mr. Keun believed that the question of the tariffs of Ottoman sani-

tary dues—a question which had been pending for ten years—was a matter to be settled diplomatically between the Sublime Porte and the powers interested.

Mr. Stenersen believed that, say what they might, it was impossible to admit that parties not interested could be good judges in this matter. The Conference, while it entered upon the discussion of the tariff, could not but see with lively regret that the Delegates of the Powers chiefly interested were not authorised to take part in it.

Some members having demanded the termination of the discussion, the Conference was consulted, and decided by a majority of thirteen votes that cause had been shown for the appointment of a Committee to consider the proposed sanitary tariff annexed to the communication made by the French Delegates at the meeting of the 31st May.

For :—Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Malkom Khan, Dr. Sawas, Chevalier Pinto de Soveral, Dr. Gomez, Baron Testa, Dr. Mühlig, M. Stenersen, Dr. Baron Hübsch, Dr. Bartoletti, and Dr. Salem Bey.

Abstained from voting :—M. Vetsera, Dr. Sotto, M. Segovia, Dr. Monlau, Dr. Goodeve, Dr. Dickson, Dr. Maccas, M. Vernoni, Professor Bosi, Dr. Millingen, Dr. Pelikan, and Dr. Bykow.

Dr. Monlau observed that the result of the division did not show the *absolute* majority necessary to give effect to a decision of the Conference. He required that the vote should be annulled, or, at any rate, that it should be stated in the minutes that the thirteen votes for the appointment of the Committee did not, in his opinion, constitute the majority of the Delegates present (26), nor even the majority of the Powers represented.

The following Delegates were appointed to constitute the Committee :—Dr. Spadaro, Count de Lallemand, Dr. Sawas, Chevalier Pinto de Soveral, Baron Testa, M. Stenersen, and Dr. Bartoletti.

The meeting terminated at 4-30 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

No. 113, dated 17th December, 1866.

From—The Secretary of State for India,
To—His Excellency the Governor-General of India in Council.

With reference to my Despatch, dated this day, No. 112, on the subject of the proceedings of the International Cholera Conference, I forward a copy of a letter* from the Foreign Office, with its enclosures, relative to the

* Dated 7th December 1866.

failure of the Commanders of ships carrying pilgrims from India to the Arabian coast to take with them Bills of Health from the Indian ports, and to the frequent arrival in the Red Sea of ships from India carrying pilgrims greatly in excess of the prescribed number.

2. I am of opinion that the representations of the Egyptian Government on these two points are entitled to every consideration. There will, I apprehend, be little difficulty in providing the Commanders of pilgrim ships leaving the ports of India with Bills of Health; and the obligation proposed to be laid on the Commanders of such ships to submit themselves to the inspection of the Authorities at Aden seems well calculated to provide against the practice of taking in additional passengers after quitting the Indian ports, which has frequently been brought to notice, and to which no remedy has hitherto been applied.

3. I have accordingly to request that you will take steps for the immediate carrying out of the measures above indicated, in anticipation of the commencement of the ensuing pilgrim season; and it would be well, at the same time, to give public notice of the consequences to which the Commanders of pilgrim ships will subject themselves by their failure either to obtain a Bill of Health, or a Certificate as to the number of their passengers from the prescribed Officers at Aden.

Dated 7th December, 1866.

From—J. MURRAY, ESQ.,

To—The Under-Secretary of State, India Office.

I am directed by Lord Stanley to transmit to you, to be laid before Lord Cranborne, copy of a Despatch from a Her Majesty's Agent and Consul General in Egypt, regarding a suggestion made to him by the President of the Egyptian Sanitary Commission as to the supervision of passenger ships in the Red Sea, and I am to request that you will be so good as to inform me what answer Lord Cranborne would wish Lord Stanley to return to Colonel Stanton.

No. 91, dated 22nd November, 1866.

From—COLONEL E. STANTON,

To—LORD STANLEY.

I have the honor to forward herewith to your Lordship a copy of a letter that has been addressed to me by the President of the Egyptian Sanitary Commission, calling my attention to the facts that British vessels arrive from India at Djeddah, or other ports of the Red Sea, without being provided with Bills of Health; and frequently carrying a great number of passengers than is allowed by Law, particularly at the time of the pilgrimage to Mecca.

His Excellency remarks that these two facts are equally dangerous for the public health, as it is to be feared that the vessels not pro-

vided with Bills of Health may have sailed from ports infected with epidemic diseases, and that those unduly crowded may bring the germs of some disease, engendered by the defective hygienic condition caused by such crowdings; and expresses the hope that Her Majesty's Government will take immediate steps to prevent the recurrence of these abuses.

His Excellency suggests that these vessels should be subjected to a visit at Aden, and that the number of passengers on board should be there ascertained and recorded on the Bill of Health; so that any attempt to land these passengers surreptitiously would be prevented or discovered, on the arrival of the vessel at her destination, by a comparison of the actual number on board with the Certificate signed by the visiting Authority at Aden. And I would venture to recommend to your Lordship that some such supervision as is suggested by Collucci Bey should be introduced, as the over-crowding of these vessels probably occurs at ports visited by them after leaving India, and prior to their entrance into the Red Sea; and such an inspection at Aden, as that suggested, would prevent the Commanders infringing with impunity the provisions of the Native Passenger Act.

[*Translation.*]

No. 1905, dated Alexandria, the 1st November, 1866.

To—COLONEL STANTON.

MONSIEUR LE CONSUL-GENERAL,—The Sanitary Intendancy is informed that ships, mostly English vessels, coming from India, finish their voyage, or put in at Jeddah and other ports in the Red Sea, without being able to produce any sort of Bill of Health. And, moreover, it frequently happens that vessels engaged in the Red Sea trade carry, especially about the time of the pilgrimage to Mecca, a larger number of passengers than is permitted.

Both these practices are equally dangerous to the public health. It is to be feared that ships unfurnished with Bills of Health come from countries infected with epidemic diseases; and that ships overladen with passengers carry with them the germ of some disease engendered by the over-crowding of a number of persons who are often in the very worst hygienic condition.

It is, therefore, of the very greatest necessity, having regard to the public interests, to prevent or suppress both these abuses; and I am convinced that to inform you of their existence, as I have done, is sufficient to cause the Government of Her Britannic Majesty to adopt the necessary measures immediately,—the period of the annual pilgrimage being now close at hand.

I deem it my duty to add that if, in spite of these measures, and in contravention of established rules, any ships happen to be found

guilty of any infraction in this respect, the Sanitary Intendancy will not hesitate to put in action all the powers given to it by the Laws and Regulations in force.

In regard to ships unprovided with Bills of Health, they will have to be classed with ships under foul Bills of Health, (unless the captains can offer satisfactory explanations removing all doubt as to the sanitary condition of the places from which their vessels started.) They will, in consequence, be subjected to the quarantine imposed by law on vessels coming under this category.

In regard to ships bringing to any port in the Red Sea passengers in excess of the number allowed by the Marine Rules, they shall be declared to be acting in contravention of those Rules, and shall be held liable to the pains and penalities provided against such infraction.

In order to prevent these ships, before reaching their destination, from landing any portion of their passengers at an intermediate port, it would be desirable if, before their entrance into the Red Sea, the British Authorities would state the number of passengers on the ship's Bill of Health. The comparison of this Bill of Health with the number of passengers brought to the port of destination would show the number of those who might have been taken on board during the course of the voyage, as well as the number wanting, who might be considered as landed or deceased en route.

The preservation of Egypt from all epidemic infection renders it imperatively necessary that the promptest and most stringent measures should be adopted with a view to prevent the approaching pilgrimage to Mecca from becoming a cause of public danger.

The Sanitary Intendancy trusts to receive from you, M. le Consul-Général, under these circumstances, that efficacious concurrence which has never yet been withheld from it.

Receive, &c.,
COLLUCCI BEY,
President of the General Intendancy.

No. 1, 9th January, 1867.

From—The Secretary of State for India,
To—His Excellency the Governor-General of India in Council.

See Annexure to Protocol No. 23.

In continuation of my Despatch, dated the 17th of December 1866, No. 113, I forward herewith further documents relating to the proceedings of the late Cholera Conference at Constantinople, *namely*, Protocols Nos. 30 and 31, and a Report on the march and mode of propagation of the cholera in the year 1865.

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 30, OF THE 27TH OF AUGUST 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirtieth meeting on the 27th August 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Spain.:

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to H. B. M.'s Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of H. M. the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of H. M. the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Mirza Malkom Khan, Aide-de-Camp-General to H. M. the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia :

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

For Russia :

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway :

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey :

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, and Member of the Superior Council of Health at Constantinople.

(For Egypt :)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

M. Fauvel commenced the reading of the report bearing the title : *Report on the measures to be adopted for the prevention of the renewed invasion of Europe by cholera* (annexure to minute No. 29), stopping at the conclusion of the first part of chapter I. of the *preliminary questions.*

M. Maccas asked permission to speak.

He concurred, he said, in the solution given to the question by the Committee; but, to his thinking, the question ought not to have been framed. It could not be interpreted otherwise than in the form of a dilemma or alternative: it was as if one were to say to another,—Which would you prefer to have, restrictive measures and no cholera, or no restrictive measures and expose yourself to the danger of an epidemic of cholera?

It was clear that, to put forward this alternative, two things ought to have been proved beforehand, *viz:*—1*st*, that restrictive measures (quarantines) may efficaciously guarantee a country against cholera; 2*nd*, that cholera may ravage a country in spite of all the hygienic measures, including disinfection, applied within its boundaries, if at the same time severe restrictive measures are not employed.

These two things being proved, M. Maccas said it would almost be insulting to a person to put this question, even though the losses occasioned by the quarantine system might be very heavy and greater even than the damage resulting from an invasion of cholera.

He believed that such a question was allowable in one case only, *viz.*, when a Government or a country could not be thoroughly convinced of the efficacy of quarantines, with respect to which they might be incredulous, or when they might be convinced of their excessive credulity in regard to the efficacy of hygienic measures, applied by themselves alone, and without having recourse to a quarantine system. Then only could the arguments employed be of any utility, and the question justified. And again, continued M. Maccas, they should have to assume a country subsisting only by commerce, a country in which a temporary interruption or diminution of its commerce would be considered as a disaster as great as the presence of the scourge itself. Such a country would not consent to such great sacrifices except in favor of measures of a nature adapted to guarantee it completely, but never in favor of measures promising only an imperfect guarantee.

But once the efficacy of restrictive measures was recognised and admitted, there was no longer, continued M. Maccas, any ground for hesitating at the damage which might be inflicted upon commerce.

However, the question being put, M. Maccas would wish to make it more complete by adding some words to make it understood that the damage caused to commerce by quarantines had been exaggerated. At the same time he would not establish any comparison between this damage and that resulting from an invasion by cholera.

Dr. Dickson took the opportunity of reminding the Conference that the question of damage, either by restrictive measures or by an invasion of cholera, was a purely relative question. There were countries which did not suffer at all commercially from the invasion. In those countries, in India for instance, and in England, restrictive measures would inflict much more injury upon commerce than cholera itself. But many other countries, under other circumstances, would suffer in their commercial transactions much more from cholera than from

restrictive measures. Dr. Dickson thought, therefore, that it was well that the question had been put and solved as had been done in the report, since it was incontestable that, in Europe especially, the solution of this question was of great interest.

M. Monlau thought the question was not one which ought to occupy the Sanitary Conference: it was rather within the province of a congress of economists. Besides, precise data were wanting.

M. Monlau would wish to know what were the *international relations* mentioned in the enunciation of the question. In connexion with this, he asked if the disadvantages of restrictive measures during a war or revolt, &c., had been properly weighed.

Finally, M. Monlau confessed he did not understand the reason which had induced the Committee to take for its starting point the absolute efficacy of restrictive measures,—an efficacy which, as the Committee itself had confessed, was only relative and very doubtful after the penetration of cholera into the basin of the Mediterranean.

M. de Lallemand explained briefly, in the interest of the discussion, what had passed in Committee in regard to this question.

Some members, he said, and M. Van Geuns among others, thought they saw another question involved in this, *viz.*, that of quarantines. But it had been pointed out to them that the question under discussion pre-supposed the prior solution of that of the efficacy of quarantines. The Committee, therefore, starting with the hypothesis that if quarantines were properly applied they might form a preservative against a choleraic invasion, concluded that quarantine measures had some advantages and caused less damage than a choleraic epidemic.

M. de Lallemand pointed out also that, in the conclusion it was said that restrictive measures, made generally known beforehand and properly applied, were much less prejudical to commerce and international relations than the disturbance occasioned to trade and commercial transactions by an invasion of cholera. It was clear, said M. de Lallemand, that all this rested upon the hypothesis of the efficacy of measures of quarantine being accepted beforehand, and solved in the affirmative.

Dr. Goodeve was of opinion that if Governments were convinced of the efficacy of restrictive measures, they would not hesitate to preserve their subjects from the scourage by adopting them, no matter at what pecuniary sacrifice. The chapter under discussion, Dr. Goodeve pointed out, did not enter upon the humanitarian question, but only upon that of the losses or benefits arising from restrictive measures considered in a commercial point of view. The Committee, he believed, had laid too much stress upon the losses caused during the prevalence of epidemics by commercial disturbances, and too little upon those caused by restrictive measures. The difference, he thought, depended upon many circumstances, and it might vary in different localities according to the importance of the commercial relations transferred on the one hand, and the duration of the restrictive measures on the

other. In some places commerce was altogether suspended during the existence of an epidemic, while in others it was not very much interrupted. No one would fancy that the commerce of Paris or of London could be affected to any extent, because cholera prevailed in either city. They would perhaps suffer a much heavier loss if they were subjected for some months to restrictive measures, as would happen if such measures were taken when cholera commenced to threaten them. Now, said Dr. Goodeve in conclusion, the question could not be really solved except by figures, which the Committee had not had at its disposal. In the absence of these, the conclusions arrived at, instead of being based upon facts, were simply the result of individual opinions. Dr. Goodeve finally said he was obliged, for want of information upon the subject, to abstain from voting upon the conclusion.

M. Fauvel pointed out the divergence of opinions among the speakers. From the various remarks and objections which had been made, it could be seen that no two of them looked at the question in the same point of view. Dr. Goodeve held an opinion differing from that of M. Maccas, and M. Monlau's differed from both.

To M. Maccas he (M. Fauvel) might reply by explaining to him, in the very words used by Dr. Goodeve, in what sense the question had been framed. In fact, Dr. Goodeve had caused it to be understood that, independently of the humanitarian question, the question, as put by the Committee, contained another point of higher importance, *viz.*, the damage and the prejudice caused to commerce by restrictive measures wherever they were employed. There were countries, Dr. Goodeve had said, which believed that a choleraic epidemic caused less damage than restrictive measures, and it was for that reason that they did not desire their application. This reasoning, continued M. Fauvel, had been held in England and elsewhere. Now it was upon this point that the question chiefly bore, seeing that it placed in the balance the prejudice caused to commerce by cholera and the prejudice arising from restrictive measures. But the question, M. Fauvel pointed out, also involved the consideration whether quarantines could cause other injuries, whether, for instance, they could increase misery and want, produce a scarcity of food, &c. All that proved that it was no mistake to treat of it.

With regard to M. Monlau's remarks, said M. Fauvel, they had been sufficiently refuted by M. de Lallemand, who had demonstrated that the Committee, having taken a hypothesis for its starting point had merely replied to this hypothesis.

The Committee, continued M. Fauvel, was far from believing in the absolute efficacy of restrictive measures. It merely regarded them as of relative efficacy, and it had been careful to recommend that useless measures should be proscribed. The whole question, he thought, consisted in knowing whether quarantines and restrictive measures in general caused more or less damage than the scourge itself. Dr. Goodeve and M. Van Geuns reasoned well, he thought, when they maintained that the application of restrictive measures would in certain countries be of no advantage. Holland and England were in this

class. At the same time he thought he found the explanation of the fact in the circumstance that these countries had suffered less than others from cholera,—less, for instance, than Marseilles and even Constantinople in the last epidemic. It might even be added that in these countries the efficacy of restrictive measures was not believed in, and nothing was considered but the injuries they caused. Elsewhere, in India for instance, people were accustomed to cholera, as Constantinople formerly was accustomed to the plague.

Finally, said M. Fauvel, it might be said, in reply to Dr. Goodeve, who believed that the Committee had not supported itself upon facts, and that it had only expressed an opinion that, in the absence of statistics, the balance it had set up rested on information furnished by competent persons, by merchants. Now, the opinion of the Committee could not be set aside, unless the contrary were to be demonstrated, and this had not been done.

M. Fauvel thought that the addition proposed by M. Maccas was altogether unnecessary, for the idea expressed by it might be found in the body of the report.

With regard to England, said Dr. Goodeve, if any certainty could be attached to the efficacy of restrictive measures, there would be no hesitation in applying them: every body would prefer to be subjected to them, rather than have cholera in the country.

There was no necessity, said M. Bykow, to declare that, as a member of the Committee, he completely shared the views of M. Fauvel. But he wished to say a few words in reply to M. Maccas, who, being opposed to the idea of comparison given out in the report, proposed a modification, where the same comparison existed. His modification, M. Bykow thought in no way changed the sense of the conclusion, and he therefore considered it superfluous.

At the request of several Delegates, His Excellency the President put to the vote the text and conclusion of the first part of chapter I. of the preliminary questions.

The Conference adopted them by a majority of 20 votes, none against.

For:—MM. Monlau, Spadaro, de Lallemand, Fauvel, Dickson, Kalergi, Maccas, Salvatori, Bosi, Mirza Malkom Khan, Sawas, Gomez, Testa, Mühlig, Lenz, Bykow, Hübsch, Stenensen, Bartoletti, and H. E. Salih Effendi.

Declined to vote:—M.M. Goodeve, Keun, and Millingen.

M. Fauvel continued the reading of the report as far as the half of page 9.

M. Bykow asked leave to speak:

He pointed out that it was said in the report that cholera threatens Russia by way of Nakhtshivan, although it ordinarily follows other routes. In order that this opinion expressed by the Committee should

not appear arbitrary, and in order to give it more consistency, he hastened to add that, in accordance with official information in his possession, cholera, which raged in Persia in 1845, manifested itself in the province of Kardaha in the month of September of the same year. Kardaha was contiguous to the district of Nakhtshivan, so that it really menaced that province in 1846.

The report, said Mirza Malkom Khan, maintained that cholera came from Meshed to Bukharia. This route did not appear to him to be the most natural, considering that Bokhara was separated from Meshed by an almost insurmountable desert. Would it not be more natural, he asked, to make cholera go from Affghanistan into Bukharia in the same way that it enters Persia by the same route?

M. Sawas was of opinion that there was no want of precision in the report. He only thought it would be well to add something more precise, and he reserved to himself the right of doing so in another meeting.

M. Fauvel, in reply to Mirza Malkom Khan, reminded him that it was M. Polak, who was believed to be very well informed with regard to Persia, who had furnished the particulars regarding Meshed and Bukharia. According to M. Polak, relations between these two countries were not only possible, but they really existed, and there were even caravans going from one country to the other. However, said M. Fauvel, the Committee did not say that it was the only way by which cholera entered Bukharia. The report said in another place that in two epidemics cholera had penetrated into Bukharia from Affghanistan.

M. Testa, in support of M. Fauvel's opinion, quoted the recent work on Central Asia by an Englishman, where there was some mention of the caravans spoken of by M. Polak.

In spite of these arguments, Mirza Malkom Khan thought the matter somewhat difficult. He had heard of many travellers, who, after years of travel, had not been able to penetrate into Bukharia from that side. But it was very different from the side of Affghanistan, the identity of religion and other circumstances rendering relations and communication between Bokhara and Affghanistan matters of sufficient ease.

M. Keun begged to be permitted in his turn to make a remark or so on a phrase he had noticed in page 8 of the report, where it was said that Singapore at the extremity of the Malayan Peninsula deserved special attention.

M. Keun expressed his entire concurrence with the conclusion contained in this phrase, but he could not say as much for that of the passage which said—"Not only is Singapore a great commercial entrepôt, but by its constant relation with continental India, it appears to be also an entrepôt of cholera, &c."

M. Keun believed that to stigmatise Singapore as an entrepôt of cholera was too strong and even unjust. In the first place, he said, it was not by the commercial relations constantly existing between it and the Indian Peninsula that Singapore could be regarded as a dangerous

point. Notwithstanding these relations, Singapore was one of those localities of the Indian Peninsula more rarely attacked by cholera than others.

He (M. Keun) was of opinion that the most particular attention which the Conference should bring to bear upon Singapore arose solely from the fact that its port was the point of convergence for all the pilgrims of the Indian countries who came there to embark for the Hedjaz. In this point of view, said M. Keun, the danger that might be presented by Singapore certainly deserved serious consideration. But he believed that in this study it was necessary to take into consideration an important fact, *viz.*, that the minimum of the navigation between Singapore and the first port-of-call on the southern coast of Arabia was from 50 to 60 days, a period during which an epidemic of cholera contracted at Singapore would have run through its ordinary course, and would have had time to become extinct before the arrival of the ship at Jeddah. Was it not necessary then, asked M. Keun, to be assured that if the Arab ships which conveyed the pilgrims ships which, as was well known generally existed in the most deplorable hygienic conditions, and in which the pilgrims were huddled together in the most inhuman and thoughtless manner,—was it not necessary to be assured that these ships in their turn would not themselves become, owing to a long voyage under a burning sky, foci in which was originated the cholera carried to the Hedjaz? Was it not necessary, besides, to be assured that the southern ports of the Arabian Peninsula, which, it was known, were frequently visited by cholera, were not themselves, rather than Singapore, the sources whence ships arriving from India with pilgrims contracted the disease, which would be imported from them into the Hedjaz?

M. Keun expressed the fear that in giving to Singapore the terrible qualification of an entrepôt of cholera, too much of the attention of the Conference would be concentrated upon it, while it would be diverted from the other intermediate ports on the Arabian Coast, the normal sanitary condition of which was as yet but little known. He proposed for these reasons the elimination of the words "entrepôt of cholera."

M. Bartoletti thought that the report was properly expressed with regard to Singapore, and he could not share the opinion of M. Keun, who had almost as much as said that the pilgrims contracted cholera from Mokalla. M. Bartoletti pointed out that the vessels never made a direct passage from Singapore to Mokalla. Dutch official documents, as well as the reports of the Ottoman authorities, and especially these latter, clearly showed that the ships which left Singapore had brought cholera with them even while passing in another direction than Mokalla.

Dr. Dickson observed that the report laid too much stress on the importation of cholera into the Hedjaz by the direct route from Singapore. It appeared to him hardly probable that a voyage which lasted for at least 50 days in the open sea could disseminate cholera. In fact, said Dr. Dickson, the arrivals from Singapore which were mentioned as

having last year given the disease to the Hedjaz, had not manifested it until *after having put in* at some ports on the Arabian coast. On the other hand, Dr. Dickson believed that the real road followed by cholera in its transmissions from India *by the sea route*, was along the coast of Mekran, and that it never proceeded *direct*.

The direction of the first epidemic of cholera in 1821, said Dr. Dickson, was from India towards Muscat, where it arrived in the month of July. The starling point of the epidemic of 1865 was in two foci of emission, very distant from each other,—one was in Jeddah, and the other in India. The two currents, after a more or less considerale course, met on the coasts near Bushire,—this town notwithstanding remaining uninfected.

From India the disease advanced along Mekran, and found itself at the end of May at Minah, on the cost of the Persian Gulf, 60′ East of Bender-Abbas. At that season the heat was so intense that the inhabitants were forced to abandon the town, which circumstance probably saved it, and arrested the march of the disease towards Bushire.

The other current, continued Dr. Dickson, left Macca, following the pilgrim track by Aneyzeh towards the capital of the Wahabees, named Der Rayah. Thence it proceeded in the direction of Jhara near Koneit, and afterwards to Shatt-el-Arab and Bassora.

M. Keun admitted the right possessed by every person to interpret facts as he understood them. Only he protested against the supposition that M. Bartoletti had imputed to him of making cholera come from Mokalla to Jeddah.

M. Bartoletti reminded him that ships which started from Singapore touched on the India coast. The choleraic germ might, therefore, in his opinion, remain latent in the ships until their arrival on the Arabian cost, for instance, where it might develope and communicate itself. He (M. Bartoletti) was of the opinion of Dr. Dickson who had said that cholera might come *viâ* the Arabian cost.

Dr. Goodeve could not conceal his surprise that the report should state that Singapore was considered as an entrepôt of cholera. He believed, on the contrary, that it was a place where cholera appeared only in an epidemic form, and that not frequently. He thought that very great stress had been laid upon the assumption that Singapore was a source of cholera for the Hedjaz. Now, it could in no way whatever be considered as a great focus for the maritime exportation of cholera; and considering its distance, which could not be traversed in less than 50 or 60 days, it could not be very compromising to the Hedjaz. Dr. Goodeve did not mean to revert to what had been said relative to the choleraic importation from Singapore in 1865, he confined himself to saying that it was not at all proved, and that it was not even probable that cholera had come from Singapore to the Hedjaz. In connection with this, he was glad to see that the Committee also, in a passage in its report, admitted that the direct importation had not been strictly demonstrated.

Regarding what was said in the same place in the report, that the embarkation of the pilgrims was effected under the most deplorable conditions, Dr. Goodeve was bound to remark that it was only a part of the pilgrims who embarked under such conditions, *viz.*, those who performed the voyage in ships carrying the Turkish flag, but those who embarked on board English ships, and who were controlled by the provisions of the Native Passengers' Act, travelled in very good condition. Out of 16 ships which in 1865 arrived in the Hedjaz from Singapore, 10 carried the English flag, and six only the Turkish flag.

M. Fauvel, in reply to the observations of M. Keun, reminded him that all that was contained in the report relative to Singapore has been furnished chiefly by M. Van Geuns. It was from this information especially that Singapore had come to be regarded as a choleraic radiating point. In fact, continued M. Fauvel, Singapore had been represented by M. Van Geuns as the point of reunion for Indian pilgrims coming from various places, even from Bengal: He thought, moreover, that it was from this point last year that those ships started which suffered most severely during their voyage from the disease.

Regarding the remarks made by Dr. Goodeve about the deplorable conditions of the embarkation of the pilgrims, M. Fauvel pointed out that the report did not say that the embarkation was effected on board ships carrying the English flag. And indeed care had been taken to say, in other parts of the report, that the Turkish flag was made use of in order to evade the provisions of the Native Passengers' Act, of which Dr. Goodeve had spoken. Now these ships, continued M. Fauvel, amounted to a very considerable number, almost as great as those carrying the English flag. In many places in the report also all that Dr. Dickson had said would be found almost exactly the same in substance, though in different terms, even with regard to Muscat. Dr. Dickson, therefore, was quite of the same opinion as the Committee, unless he wished to deny the possibility of the importation of cholera from India into the Red Sea.

M. Bartoletti confirmed the fact quoted by Dr. Goodeve in regard to the 16 ships, of which 10 carried the English, and 6 the Turkish flag. But he pointed out that, according to information furnished by M. Millingen, ten thousand Javanese pilgrims embarked last year at Singapore, without including in this number those pilgrims who were not Dutch subjects. All this, M. Bartoletti thought, might give an idea of the number of ships starting from Singapore, and of the conditions in which the embarkation of the pilgrims was effected. The conditions were altogether exceptional which made Singapore a commercial entrepôt, and at the same time an entrepôt of disease. M. Bartoletti concluded by saying that if it had not been demonstrated, it was at any rate very probable that cholera was imported last year from Singapore into the Hedjaz.

M. Fauvel wanted to know how it was possible to reconcile the fact of only 16 ships and of 10,000 Javanese pilgrims, exclusive of other than Dutch subjects, having left and embarked at Singapore last

year. These ships, observed M. Fauvel, could have conveyed only a portion of the pilgrims, and consequently the remainder must have been embarked in ships of which no mention was made.

One of these documents, said M. Keun, handed by the Dutch Delegates to the second Committee, was the report of M. Bougaret, received from Jeddah, regarding the condition of the Javanese pilgrims who last year proceeded to the Hedjaz. In this report mention was made of about 3,000 of these unhappy pilgrims who perished in the desert on their way from Medina to Mecca. M. Bougaret also spoke of 800 passports which were shown at Jeddah on the return of the Javanese pilgrims. He mentioned, too, that the denomination of Javanese was given indiscriminately to all the pilgrims from the peninsula of Malacca and the districts independent of Dutch authority. According to the same report, said M. Keun, the figures given did not amount altogether to more than 3,800.

M. Millingen pointed out that some confusion existed in the dates between 1864 and 1865. The report of the Consul mentioned by M. Keun related to the year 1864.

M. Bartoletti considered that this frightful mortality was almost impossible. He could scarcely understand that 3,000 deaths occurred out of a total of 3,800.

At the request of several Delegates, His Excellency the President put to the vote the second part of chapter I, as far as the half of page 9.

It was adopted unanimously.

M. Fauvel read the conclusion of the second part of the 1st chapter of preliminary questions.

M. Keun asked to be allowed to speak.

His intention, he said, being to vote in favor of the text and conclusion of this chapter, he thought it his duty to justify the apparent contradiction which might be urged against him, since he had already voted against the first part of the same chapter.

M. Keun had thought that, in concluding in favor of a general application of quarantine measures, sufficient account had not been made of the respective position of each country so as to establish the balance of the advantages each might draw from them, and of the more or less disastrous consequences which restrictive measures might exercise on the commerce and industry of each. He thought the conclusion on this point was too general.

It was incontestable, in M. Keun's opinion, that in regard to the ports of the Mediterranean, where it was possible to apply these measures with precision, they ought to override every consideration regarding damage and loss to commerce, but the ports of the northern countries were far from being similarly circumstanced.

In the Netherlands, for instance, what result could be hoped for from the efficacy of measures of quarantine? The country, in this

matter, was entirely dependent on what took place in France and Germany. In the event of the invasion of these two countries by a choleraic epidemic, what measures of quarantine could be adopted to prevent the extension of the disease to their frontiers. Every species of quarantine which might be established even to the detriment of the commerce and trade of the Netherlands, would, it is quite self-evident, be insufficient and ineffectual to preserve that country. It must not be forgotten that the Conference had always set a very slight value on sanitary cordons.

The Government of the Netherlands, continued M. Keun, had this year instituted, at the time when cholera, passing from France into Belgium, was menacing the Netherlands, a medical commission whose duty it was to find the means of establishing a barrier against the invasion of the scourge. After great research and consideration, they were compelled to admit that success was impossible, and that the country must of necessity resign itself to the probable eventuality of an invasion.

This was why, said M. Keun, he had thought it his duty to concur in the first conclusion, but the aspect of the question underwent a complete change when the matter in hand was to oppose an invasion by means of quarantine measures adopted in the localities in closest proximity to the primitive focus.

The efficacy of these measures, such as they were recommended in the report, could not, he thought, be commented upon.

Before concluding, M. Keun wished to point out that the Committee would have done better not to have expressed the discouraging doubt, to be found at page 10 of the report, regarding the measures of quarantine which the Persian Government ought to take at Herat and in the Persian Gulf with the object of arresting the invasion of cholera by land. Judging from all that he knew about Persia, M. Keun was induced to believe that the Government of that country displayed the most laudable disposition, and did all in its power to enter upon the path of reform, so as to participate, as much as possible, in the European union. Thanks, not only to the elevated mind of the Sovereign, but also to the elevated sentiments of his ministers and functionaries, many improvements had already been realised in Persia: and so steadily does she now march forward in the road of progress, that she would receive favorably and with eagerness the wishes of a Conference in which she was worthily represented. Consequently, M. Keun believed that it would be preferable to substitute for the doubt the wish that the Persian Government, in the interests of its people and in those of all Europe, would organise a sanitary administration in its territories as complete and perfect as possible, and that it should be the duty of this administration to look actively and intelligently after the accomplishment of the sanitary measures developed in the report.

Mirza Malkom Khan, after having done justice to the importance of the report under discussion in the double point of view of a good

style, and the efforts made in it to study the situation of Persia in regard to cholera, confessed that Persia did, in fact, play a great part in the dissemination of the scourage, for she propagated it in two ways—by the Persian Gulf, and by land.

At the same time, he remarked, the Persian Government, even with the greatest goodwill, could arrest the march of cholera on one side only, towards the eastern frontier. There it could act energetically, and it would be in a position to set up a formidable barrier against it. And Mirza Malkom Khan would therefore wish the report to express itself more energetically in this respect, and insist more strongly than it had done on the measures which it was incumbent on the Persian Government to take on that side of the empire. It would be well if the report would clearly and distinctly indicate these measures.

M. Sawas thanked M. Keun for having anticipated him, and for having very well said, what he had himself said on many occasions, *viz.*, that His Majesty the Shah receded before no sacrifice in order to place his country in the path of European progress and civilization.

M. de Lallemand approved of Mirza Malkom Khan's observations. He would also wish, as proposed by M. Keun, that the report, to be more precise and to soothe the just susceptibility of the friends of Persia instead of expressing a discouraging doubt regarding the Persian Government, should address an exhortation to its goodwill.

In conformity with this view, M. de Lallemand moved the following modification in the last part of the paragraph regarding Persia:—

"It is therefore of the greatest importance that Europe should "impress upon the Government of His Majesty the Shah of Persia the "importance of establishing on its eastern frontiers efficacious barriers "against the invasion of cholera, it being assisted by all possible means "in doing so."

M. Fauvel thought the modification good, and seconded the motion.

The Conference concurred. The modification was adopted.

Mirza Malkom Khan also proposed the suppression of the entire passage relating to the Imam of Muscat. Mirza Malkom Khan asserted that the Imam had no claim upon the important port of Bundar-Abbas.

M. Millingen replied that the Imam, on the contrary, was everything in the Persian Gulf, for he possessed the key to it.

A discussion upon the subject ensued between several Delegates, some maintaining that the authority of the Imam was only limited, and others that he ruled as its master all the shipping of the Persian Gulf.

M. Stenersen said the debate did not lead to any definite result, but the opinion of the Persian Delegates who admitted that the Imam possessed the authority attributed to him ought to prevail, and should

decide the Conference, which possessed the power of eliminating from the report the three lines referring to the Imam.

The Conference thought it sufficient to record their declaration in the minutes.

Dr. Goodeve wished to express his opinion upon the passage relating to the Punjab. It was said in the report that very much might be expected from a precautionary system organised in the Punjab itself by the British Government. Dr. Goodeve thought it was impossible to imagine a position more difficult to be guarded than the Punjab by a sanitary cordon. An extensive frontier, bounded by hills and mountains, and occupied by wild and barbarous or scarcely settled tribes, who were frequently up in arms, presented, he thought, a number of almost unconquerable difficulties. These difficulties were calculated to prevent good results, even though the work should be done with the greatest goodwill.

Regarding the question of Bab-el-mandeb and the question of Egypt, Dr. Goodeve proposed to revert to them when they again came under discussion. He would say nothing about them at that moment.

M. Bartoletti stopped for an instant at the question of the sanitary department on the Ottoman frontier, spoken of in page 11 of the report. He confessed that this department had never worked so continuously and regularly as it should, if the rules framed by the sanitary administration had been observed. But he added that the department, even such as it was, might be very useful on the land side. He pointed out also that besides the localities mentioned in the report, there were many others which were watched, even in the defiles.

At the request of the Conference, the President called for the votes of the Delegates upon the second part of the 1st chapter.

It was accepted by a majority of 23 votes, none against.

For :—MM. Sotto, Monlau, de Lallemand, Fauvel, Goodeve (under reserve), Dickson, Kalergi, Maccas, Bosi, Salvatori, Keun, Millingen (under reserve), Mirza Malkom Khan, Sawas, Pinto de Several, Gomez, Mühlig, Lenz, Bykow, Stenersen, Hübsch, Bartoletti, and Salem Bey (under reserve).

H. E. the President put the conclusion of the second part of the 1st chapter to the vote.

It was adopted unanimously.

M. Fauvel read the 2nd chapter: Measures to be taken in India, III.

With regard to the expression *invading cholera*, Dr. Goodeve said, he did not perceive any difference between the *invading cholera* of the present day, and that which has from all time existed in India. Its diffusion, to his thinking, was not due to a new quality acquired by cholera, but simply to circumstances favorable to its progress.

Regarding what was said in the report at page 19, it was his bounden duty, Dr. Goodeve said, to declare that the Government of

India looked as anxiously after the welfare of the Native population as of Her Britannic Majesty's troops; and that it took as deep an interest as could be felt in the sanitary condition of the Natives, simply for their own benefit. That, said Dr. Goodeve, was clearly shown in the instructions given to the permanent sanitary commissions.

M. Sotto was convinced that the Committee had never thought of imputing to the British Government the reproach of only looking after the health of its troops and not caring for that of the Natives. M. Sotto reminded Dr. Goodeve that he himself had, in one of the sittings of the Committee, confessed that it was very difficult in India to put in practice those sanitary improvements which were admitted to be indispensable on account of the resistance of the Hindoos, whose prejudices stood in the way of the execution of any novel measure. M. Sotto believed that that was the idea of the Committee.

M. de Lallemand spoke to the same purport as M. Sotto. But the important question, in the opinion of the Committee, was, he thought, to make every body participate in the benefits of sanitary improvements; and to this it had invited the attention of the British Government.

As for the expression *invading cholera*, said M. de Lallemand, the discussion of the general report had given its definition by laying down exactly the meaning attached to it by the Committee, *viz.*, that cholera has, since 1817, assumed an expansive, progressive and invading character which it did not possess before that period.

M. Bykow added that an instance even had been given in the general report to demonstrate that since 1817 cholera had assumed a new character,—an invading march which it did not possess before.

M. Fauvel thought it was unnecessary that he should say anything in refutation of Dr. Goodeve's remarks. MM. Sotto and de Lallemand had anticipated him, and their remarks, he thought, were quite sufficient.

In compliance with the general request, His Excellency the President called for a division upon the text and conclusion of the third part of the 2nd chapter, both of which were adopted unanimously.

Votes:—MM. Sotto, Monlau, de Lallemand, Fauvel, Goodeve, Dickson, Maccas, Kalergi, Salvatori, Bosi, Sawas, Gomez, Lenz, Bykow, Stenersen, de Hübsch, Bartoletti, Salih Effendi.

The meeting terminated at 4-30 P. M.

Order of the day for the next meeting.

Continuation of the discussion of the report on the measures to be taken in the East.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 31, OF THE 30TH AUGUST 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirty-first meeting at Galata-Serai on the 30th August 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain:

Don Antonio Maria Sagovia, Consul-General, Chargé d'Affaires.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Benardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Medical Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

The minutes of the 29th meeting were read by the Baron de Collongue, and adopted, with a few amendments.

His Excellency Salih Effendi read a letter in which Dr. Lenz announced that he was compelled to return to St. Petersburg, and expressed his regret at his inability to continue to share in the labors of the Conference.

M. Segovia regretted that the state of his health did not permit him to attend at the last meeting, and therefore to assist in the discussion of the 2nd section of the report of the 3rd Committee. This chapter contained certain particulars regarding the town of Singapore, which he (M. Segovia) who had lived in that town for many years, did

not think were quite correct; and notably, for instance, it was wrongly represented as an entrepôt of cholera and as one of the great foci of its maritime exportation. During the whole period of his stay in the town, M. Segovia had never seen cholera assume the epidemic form. Ships with cholera patients on board sometimes arrived in port, but not so frequently as to make it necessary to establish a special cholera hospital, as had been done, for instance, for lepers. Persons suffering from cholera were conveyed to the ordinary hospitals, and, whether from the effects of the climate, or for some other reason, it was even said that the number of those who were discharged cured was relatively considerable. M. Segovia said that the estimated number (eight to ten thousand) of Mussulman pilgrims who came to Singapore every year on their way to Mecca was exaggerated. He also begged the Conference to remember that Singapore had no port, but a magnificent roadstead, surrounded with islands, some of which were as large as the island on which the town itself was built; that the three straits, those leading to the China Sea, the Sonda Straits, and the Straits of Malacca, by which the bay was entered, formed currents, the action of which, combined with that of the tides kept the water in good condition; in the third place, that there was bottom enough to afford an anchorage of such extent that M. Segovia had seen as many as five hundred ships anchored at a time in the roadstead, and yet there was no crowding. As for the climate, it was comparatively healthy, and it could be dangerous to European constitutions merely on account of the heat. At the same time, however, Europeans could live much longer at Singapore than they could do in most Indian towns.

Dr. Fauvel, in reply to M. Segovia, said that perhaps there had been no choleraic epidemic at Singapore during his stay there, but that it was quite certain that cholera had raged there since then, and notably in 1864. In regard to the number of pilgrims who came to Singapore for the purpose of embarking, which seemed to M. Segovia to have been exaggerated, the Committee had taken it from Dutch statistical documents. These pilgrims, who came, not only from the Dutch possessions, but from the entire Malayan Peninsula and from Bengal, frequently carried cholera with them, and they afterwards took it with them when they again embarked in the vessels which were to carry them to the Red Sea. Dr. Fauvel believed that the use of the word "*entrepôt*" in the report was, therefore, fully justified. He had besides never disputed the salubrity of the climate of Singapore: the report merely mentioned the miserable and deplorable condition in which the pilgrims embarked; now, it was proved by official documents communicated to the Committee, that there was overcrowding on board the ships, where, if the expression might be used, the shipping crimps piled the pilgrims one upon the other. These remarks having been listened to, the Conference resumed the discussion of the report, where it had been interrupted at the termination of the last meeting, *viz.*, the 4th section of the 2nd chapter.

Dr. Gomez thought great good would result from the permit, the kind of passport, or teskereh, which the Committee proposed to require

from pilgrims, and which would be delivered only to those who would have proved themselves to be in possession of the means of supplying their necessities. Without mentioning the advantage of keeping off the poor, who were the most to be dreaded in the point of view of the transmission of cholera on account of the bad hygienic conditions in which they travelled, the number of the pilgrims might be known in this way, their state of health might be verified, and these particulars might be transmitted to the places situated on the route of the pilgrims, with a view to the necessary precautions being taken beforehand. These teskerehs might also become a source of revenue from which the expenditure, occasioned by the pilgrimage, maintenance of the pilgrims, relief, &c., might be met.

Dr. Salem Bey admitted the utility of the teskerehs as a precautionary measure, but he did not believe in the possibility of deriving any revenue from them.

Dr. Goodeve would have wished that mention had been made in the report of the very useful assistance given to the Government by the Sanitary Commissions of the Presidencies of Madras and Bombay, since the first attempts were made in those provinces at measures of the hygiene applied to pilgrimages. Mr. Montgomery, who was a member and secretary of the Madras Sanitary Commission, attributed to Mr. Kingsley, at the time apothecary at Conjeveram, the honor of having suggested the idea of taking hygienic measures in that station during the pilgrimage.

Dr. Goodeve, who had furnished the Committee with the particulars it had given regarding the number of pilgrims who visited the places of pilgrimage in Bombay in 1865, pointed out, on the other hand, an error in figures in these particulars. The number of pilgrims did not vary between 2,000 and 50,000, but rather between 2,000 and 100,000; as many as 100,000 pilgrims were counted in three places. Dr. Goodeve declared finally that he did not admit the possibility of requiring a teskereh from the pilgrims, and that he would, therefore, refrain from voting in favor of this portion of the conclusions of the Committee.

Dr. Bartoletti reminded the Conference that the Ottoman Medical Mission sent this year to the Hedjaz had adopted measures analogous to those which had been applied in the Presidencies of Madras and Bombay. Considering the good results obtained at Mecca, he did not hesitate to support the conclusions of the report.

In the opinion of Dr. Mühlig, the Committee would not be sufficiently affirmative in saying that it did not think that the quarantine of observation of 48 hours, which was imposed by the Government of Bombay on pilgrims having cholera among them, before permitting them to enter a town, was a sufficient precaution : the measure was clearly altogether illusory.

The 4th section was put to the vote, and adopted unanimously, text and conclusion, Dr. Goodeve voting under reserve with regard to the first part of the conclusion.

The 5th section (chapter II) was then read.

Singapore being one of the places at which the establishment of a sanitary department was recommended by the Committee, M. Segovia admitted the utility of such an establishment, but at the same time he would not admit that it was more indispensable there than elsewhere. The number of passengers who embarked at Singapore was less considerable than the Committee believed. Many of them came from the Dutch possessions as well as from the Celebes, but very few from the Malayan Peninsula. As for the Indian pilgrims, a glance at the map was sufficient to show that they could not go to Singapore for the purpose of embarking without making a most unnecessary détour.

Dr. Goodeve would ask how it could be explained that English captains could (as was said in the report) have evaded the provisions of the Act of 1858, when they went to Jeddah. There was an English consul at that port, whose duty it was to see that the rules were carried out, and that the captains should not escape any of the consquences entailed by their infringement. Dr. Goodeve did not think it was satisfactorily proved that it was so with the two ships mentioned in the report—the *North-Wind* and the *Persia*. It was said that there were 632 passengers on board of one, and 530 on board the other, of these two ships; but it should not be lost sight of that these figures included the crews. Now, it appeared from a report of the English consul at Jeddah that the *North-Wind* had a crew of 79 men, and the *Persia* 37, reducing the number of passengers on board the former to 553, and to 493 on board the latter. As a vessel might, moreover, under the terms of the Act of 1858, embark a man to each registered ton and a half, crew and passengers included, the *North-Wind* and the *Persia* would, judging from that, be vessels of 948 and 795 tons respectively, an amount of tonnage in no way extraordinary. In regard to the *Sydney*, which was also mentioned in the report, it should be taken into consideration that this ship had, it might be said, been taken possession of forcibly by the fugitives: it was a case of *vis major*.

With respect to the teskerehs, Dr. Goodeve found it difficult to believe that the idea could seriously be entertained of rendering them obligatory in India as they were in the Dutch colonies, and especially, that the measures had all the advantages supposed to attach to it. All that the Dutch pilgrims gained by it was to be fleeced on their arrival at Mecca: in a short time nothing remained to them, and frequently indeed, as was seen from a report of the Dutch consul at Singapore, they were forced to sell their liberty temporarily in order to gain the money necessary to carry them home.

Dr. Salem Bey remarked that it was possible that the provisions of the Native Passengers' Act were properly carried out in English ports, but they were certainly not so elsewhere. In 1865, the English ships which conveyed the pilgrims from Jeddah to Suez were overcrowded, not because the pilgrims had forcibly seized upon them, but simply because these ships used all the means in their power to out-do the vessels of the *Azizieh* Company. This year, when stricter watch

was kept, it frequently happened that, at the moment of departure, it was necessary to insist upon the landing of hundreds of passengers.

Dr. Bartoletti added that a precise calculation could not be made of the number of passengers a ship could carry by taking a proportion to its nominal tonnage. It should not be forgotten that the vessels did not carry pilgrims alone, but merchandise also, such as rice, cereals, &c. It was to be desired that the Native Passengers' Act should be observed everywhere, and notably in the Red Sea; but, as a matter of fact, it was not so observed, and its provisions were not always applied even on board English vessels. Competition almost always caused the regulated number to be exceeded. One of the physicians of the Ottoman mission had this year seen an English ship coming from Yambo on board which there was such a number of pilgrims that it was necessary to raise a second stage on the deck to receive them.

Dr. Millingen remarked, with reference to teskerehs, and the difficulty there would be, according to Dr. Goodeve, in rendering them obligatory, that there was nothing in that in opposition to the prescriptions of the religious law of the Mahomedans. Mahomed himself imposed the pilgrimage only on those who were in a condition to undertake the journey to Mecca. Now, the three most celebrated Imams of the Mahomedan law explained as follows what Mahomed meant by "being in a condition to undertake the journey." Shafi believed that the prophet alluded to the provisions and even the conveyance necessary for the pilgrims; Malek, that he meant the health of body and the pecuniary resources of which the pilgrim stood in need to defray the expenses of the journey; and Abu Khanifeh, that the prophet meant provisions and also health. In the Dutch possessions it was required that those who desired to undertake the pilgrimage should show that they possessed the means of doing so, but many evaded the requisition and proceeded to Singapore, where all they had to do was to pay the price of the voyage.

Dr. Millingen then read the following extracts from a despatch from the Dutch consul to His Excellency the Minister for Foreign Affairs at the Hague, under date the 14th March 1866. The particulars contained in this despatch had been often before quoted during the course of the labors of the Conference; and as they were interesting in connection with the question under discussion just then, it was decided, on the motion of Dr. Salem Bey, that the extracts read by Dr. Millingen should be reproduced *in extenso* in the minutes:—

"..... There is no doubt that the appearance of cholera in Arabia "must be partly attributed to the voyages of the pilgrims who proceed "to that country, and who are not all subjects of Netherlands India, "but also natives of this place, of Malacca, Sarawak, Johore, Padang, "Mwar, and all the small free states of the Malayan peninsula. All "these pilgrims arrive here on board ships or small vessels, and "stay here waiting for the first favorable opportunity to undertake the "holy voyage .....

"The voyage is at length about to be undertaken. The sheikhs "have sought and found the means of embarking. If the voyage is "undertaken on board English ships, every thing usually goes on pretty "well, the law not permitting ships under the British flag to take on "board more than two passengers per ton, and the Government here "not allowing a ship to leave port until it has been visited by Lloyds' "experts, who have to see that the ventilation is good and that the "vessel is supplied with a sufficient quantity of drinking water. Each "pilgrim takes with him his provision of rice. For women, who all "remain aft in the cabin, the passage-money is $18, and for men "$12, 13, or 16 accordingly as they possess one, two, or three boxes of "baggage. Usually, however, Turkish and Arab ships are to be found "here not subjected to the law, and which are preferred to English "ships by the pilgrims, because the crescent, the symbol of their faith, "floats over them. These ships are generally and almost always "European-built vessels, but condemned as unseaworthy and in such "bad condition that no Company in the world would consent to insure "them. The only thing to excite surprise is that even one of these ships "arrives safely at the end of her voyage, and there is all the more reason "for surprise in as much as they are commanded by Arabs, who, "generally speaking, are better qualified to chant verses from the "Koran than to command a ship. On board these ships, the passen- "gers are crowded together in a manner that seems inhuman; their "number is double what is allowed by the English law, and the "pilgrims are left to their own resources for shelter, while no sort of "precaution is taken to ensure good ventilation or the provision of "things necessary during the voyage. The sole care of the owners is "that there should be a stock of rice on board, in order to be able to "sell it at usurious prices to the pilgrims whose own stock has run "out ... It is known that in 1864 cholera raged more or less in- "tensely at Java and at this place, and the information I have col- "lected has proved to me clearly that natives suffering from the "disease, or convalescent, have been embarked in that condition. It was "not difficult to foresee the consequences. What a fertile field for a "contagious disease! filthy passengers huddled together like sheep, with- "out the necessary ventilation, in an unseaworthy and sometimes even "a leaky ship, and all this under the burning rays of a tropical sun! "It is not a matter of surprise that cholera should spread under such "conditions, and that some of these pilgrim-ships should be considered as "pestilential sinks, communicating the disease to every place where "their human cargo lands. Nothing can give an idea of the filth on "board; the stench is so intense that I could mention instances where "the commanders of other vessels, on account of the tainted odour "exhaling from these pilgrim-ships, have been obliged to weigh anchor "and remove to another spot, where they would not be to windward of "them and where they could inhale pure air. ...

"..... Measures, however, could be adopted against overcrowding "on board these pilgrim-ships. Those nations which possess ships in these "seas might frame a law similar to the English, and direct their consuls

"to apply its provisions with strictness. For my own part, I should be "sincerely glad to protect the pilgrims. In the same way measures "might also be adopted to secure good ventilation, and to assign this "duty to the agents of Lloyd or Veritas. But these laws should "especially be made by the Ottoman Government, for the majority of "the pilgrim-ships sail under the Turkish flag, and so long as they are "permitted to crowd their decks with passengers as if they were bales "of goods or sheep, all the Dutch and English laws will only end in "the substitution of Turkish ships for vessels of these nations. The "Ottoman Government ought then also to appoint a consul here who "would have both the will and the power of maintaining the rules. It "would be necessary to select an energetic European who would not "regard the post as a sinecure, and one who would be independent of the "situation and above venality; one, in short, who would have the health "and fate of the pilgrims really at heart.....

READ."

Dr. Salem Bey and His Excellency Salih Effendi reverted to the various ways of interpreting the prescriptions of the religious law in regard to the conditions in which a man must be to be or not to be in a fit state to undertake the pilgrimage. Dr. Salem Bey completed the information given by Dr Millingen thus:—The Imams Abu-Hanifa and Shafi required that the intending hajji should possess the means, not only of meeting the expenses of the journey, but also for the maintenance of his family during his absence: to these conditions Abu-Hanifa added bodily health. According to the Imam Malek, it was sufficient, on the contrary, to be in possession of bodily health in order to undertake the pilgrimage. Dr. Salem Bey believed that the delivery of teskerehs would be possible in certain countries, but very difficult in others, in precise proportion to the different modes of interpreting the Koran. There can be no doubt, for instance, that the Mahomedans of the sect of the Imam Malek would only submit to this formality with great difficulty.

Dr. Mühlig was in possession of particulars confirmatory of what had been said by Dr. Bartoletti regarding overcrowding on board the English ships by which the pilgrims were carried this year. It was to be wished that the Native Passengers' Act was better observed, and that it could be so everywhere.

Dr. Mühlig, whom his colleague M. de Krause had begged to explain his ideas relative to the precautionary measures to be taken in India with regard to the pilgrims leaving for Mecca, believed that the moment had come to do so. M. de Krause thought it would be indispensable that these pilgrims should be subjected, before their embarkation, to a quarantine of observation; but these were questions of an excessively delicate nature, the solution of which belonged exclusively to the Governments interested.

Dr. Fauvel said that, except with regard to one point, he had nothing to add to the considerations that had been put forward, and

which formed a sufficient reply to Dr. Goodeve's remarks. It might be that the pilgrims from the Dutch possessions were fleeced at Mecca, for this reason, if for no other, that their Government required that they should possess the necessary funds for the journey.

But this was a question of police, with which they could not deal, and it could not be shaped into an argument against the utility of teskerehs. In a sanitary point of view, it was evident that those pilgrims, who had money enough to provide for their necessities, existed in better hygienic conditions.

Section 5 was put to the vote, text and conclusion, and adopted unanimously; Dr. Goodeve voting under reserve with regard to some points mentioned by him.

The Secretary read clause A. of section 6, chapter III.

Count de Lallemand announced that, since the termination of the labors of the Committee, he had received from his Government precise particulars regarding the localities mentioned in the report as being adapted for a sanitary establishment at the entrance of the Red Sea. It appeared from these particulars, which were furnished by an officer of the Imperial marine possessing a profound knowledge of those parts, and which had been communicated besides to the Conference at its last meeting, that Bab-el-Mandeb ought to be struck out of the list on account of its bad anchorage in certain winds. Good anchorage could be obtained only at Kamaran or Obok.

Dr. Salem Bey mentioned that the Egyptian Sanitary Intendancy, which had made a lengthened study of the question, gave the preference to Moka.

Count de Lallemand objected that to choose a locality within the Red Sea would augment the difficulty. If this were done, it would be necessary to have two establishments, one at the entrance of the Red Sea where the ships would be visited, and a second, to which those ships whose sanitary condition was found to be dangerous would be sent. It would be preferable to have but one establishment at the entrance of the Red Sea: surveillance would then be rendered more easy, and would not be so easily avoided by ships.

While he recognised the merit of the manner in which the Committee had acquitted itself of its extremely difficult task, Dr. Goodeve said he could not altogether agree with it. Count de Lallemand had just pointed out the insufficiency of the anchorage at Bab-el-Mandeb, but there was another consideration which rendered the creation of a sanitary establishment very difficult. Were not the attacks of the independent Arab tribes to be dreaded, and would it not be necessary to erect fortifications and maintain a garrison at Aden for the defence of the lazaretto? Dr. Goodeve was of opinion that it would be preferable to have a place more to the north, Kamaran, for instance. He added that he did not know whether his Government would consent to the establishment of the survey station at Perim. However, leaving aside the question of possibility, Dr. Goodeve expressed his doubts as to the efficacy of

the proposed measure. Large ships might, indeed, be stopped, but in regard to the smaller barques which were more dangerous in the point of view of the transmission of cholera, would it be possible to prevent them from passing, if only at night, in spite of strict watch and ward? The large ships that passed through the Straits proceeded to Suez or the ports of the Hedjaz. It would be as efficacious and less troublesome to them, if they were directed to some island on the Arabian coast, where they could undergo survey, and where, if necessary, they could be kept in quarantine, and where a *visa* could be delivered to them, without which they should not be admitted into any port in the Red Sea. For ships bound to Suez, why should they not be surveyed in the neighbourhood of that port? As the maintenance of the survey station at Perim did not at the same time dispense with the maintenance of lazarettos in the ports of the Red Sea, Dr. Goodeve doubted the utility of that station, and he would, therefore, vote against the conclusions of this part of the report.

Dr. Dickson believed that it would be well to establish two points of surveillance, one at Perim, and the other at Moka, for small coasting vessels. It was impossible to think of guarding barques and small ships at Perim, and they were those which most frequently conveyed the pilgrims. The lazaretto might, perhaps, be established at Tadjoura, opposite Perim, on the African coast.

Dr. Dickson had heard that this locality possessed an extensive anchorage, and that it would be easy to victual persons in quarantine there; and finally, as he had said, it was situated on the African coast, which, to his mind, was an advantage in the event of the persons in quarantine making their escape and gaining the interior of the country.

Dr. Dickson did not think that Moka possessed sufficient resources for the reception into quarantine of a large number of persons.

Dr. Fauvel stated, in the first place, that the Committee had only made suggestions. The question could not be solved until it had been carefully considered locally, and it was treated by the Committee therefore, in a, so to say, theoretical point of view.

They could not conceal from themselves, moreover, that, whatever might be the system adopted, cases of infringement and communication would occur. The question, therefore, substantially was to render such cases as rare and as difficult as possible. Dr. Fauvel believed, contrary to the opinion held by Dr. Goodeve, that such danger of communication was more to be dreaded on the part of large vessels than of small barques. The barques hugged the coast; they never risked going out into the open sea; they made only short voyages, and being able to stop if cholera declared itself, which large vessels were unable to do, they offered, at the most, less danger in the point of view of transmission. Was it not also necessary to take into account that it was in seasons of epidemic especially that surveillance should be exercised; that the existence of cholera in India, or at the various places at which ships touched, was always known beforehand; and that, finally, the period of the arrival of the pilgrims was known, and that, therefore, it was always possible to judge, according to the advices received, in

regard to the means of rendering the surveillance more active? However, if this surveillance was impossible at Bab-el-Mandeb, at the entrance of the Straits, would it not be still more impossible in the interior of the Red Sea, where ships might so easily evade it? Dr. Fauvel declared, in conclusion, that he would not reply to the various objections which had been urged against the selection of localities where the Committee thought a lazaretto might be established. Perhaps they were well founded. The Committee, which had thankfully accepted Dr. Dickson's information regarding Tadjoura, could only repeat that the site of the lazaretto to be established could not be decided until after a renewed local consideration of the subject, and that this was a matter which entirely belonged to the various Governments which would have to come to some understanding upon the point. The Committee gave its opinion in favor of the convenience of a sanitary establishment at the entrance of the Red Sea: nothing more.

Dr. Bartoletti and Dr. Millingen believed, like Dr. Fauvel, that the establishment ought to be situated at the Straits if it was desired to have an effective surveillance. Dr. Bartoletti added that it seemed to him that it would be preferable if a spot on the African coast were selected; but whatever might be the locality chosen, he had no doubt that it would always be necessary to have a garrison there, to repulse, if necessary, the attacks of the natives as well as to maintain order among the persons in quarantine themselves.

His Excellency Salih Effendi remarked that the same thing might be said in regard to supplies of provisions; the same difficulties in this respect would be encountered almost anywhere.

Paragraph A. of section V was then put to the vote, and adopted by all but Dr. Goodeve, who voted against it.

The meeting terminated at 4-30 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

No. 8, dated 31st January 1867.

From—LORD CRANBORNE, *Secretary of State for India,*
To—The Governor-General of India in Council.

In continuation of my Despatch of the 9th instant, No. 1, I forward for your information and guidance, and for communication to the several Local Governments, copy of further correspondence with the Foreign Office, on the subject of quarantine and of hygienic measures to be applied in the case of the approaching pilgrimage to Mecca.

Letter from Foreign Office, dated 14th January 1867, with enclosures.
Letter to Foreign Office, dated 31st January 1867.
(Also enclosed Protocols Nos. 32 and 33, of Constantinople Conference, as to Cholera.)

Dated 14th January 1867.

From—E. C. EGERTON, ESQ.,

To—The Secretary to the India Office.

I am directed by Her Majesty's Secretary of State for Foreign Affairs to transmit to you, to be laid before the Secretary of State for India, a Despatch from Lord Lyons, regarding quarantine measures to be applied to the approaching pilgrimage to Mecca, and I am to request that you will move Lord Cranborne to favor Lord Stanley with his opinion on this subject. I have to request that Lord Lyons' Despatch may be returned with your reply.

No. 1, dated 1st January 1867.

From—His Excellency LORD LYONS, G. C. B., *Her Majesty's Ambassador at Constantinople,*

To—The Secretary of State for Foreign Affairs.

I have the honor to transmit to your Lordship copies of two Despatches which have been addressed to me by Dr. Dickson, and a copy of a Report of a Committee of the Constantinople Board of Health, on the subject of quarantine and of hygienic measures to be applied in the case of the approaching pilgrimage to Mecca. I have also the honor to enclose a copy of a Despatch which I have written to Colonel Stanton, Her Majesty's Agent in Egypt, on the subject.

1. From Dr. Dickson, 12th December 1866.
2. " " 19th "
3. Report of Committee of Board of Health.
4. To Colonel Stanton, 1st January 1867.

Neither Dr. Dickson nor I have discovered, in the proposals of the Committee, anything to which we deem it necessary to object, or anything likely to be needlessly vexatious to British Indian pilgrims. This last point is, however, a matter which is of so much delicacy and importance, and which depends so much upon local circumstances, of which my knowledge is imperfect, that I venture to ask your Lordship to cause the Report to be carefully examined, and to send me instructions by Telegraph if it shall appear to contain anything seriously objectionable.

I have asked Colonel Stanton to give me his opinion of it without delay.

Dated 12th December 1866.

From—DOCTOR E. D. DICKSON,

To—His Excellency LORD LYONS, G. C. B., *Her Majesty's Ambassador at Constantinople.*

I have the honor to inform your Lordship that the Porte transmitted yesterday to the Board of Health a communication from

Salih Effendi, the late President of the Cholera Conference, inviting it to concert upon the hygienic and restrictive measures necessary to meet the approaching pilgrimage to Mecca, and urging at the same time a settlement of the question of the Sanitary Tariff.

The Board declined to take up the question of the Tariff, as its settlement now rested with the Porte and the Foreign Legations; but with respect to the Mecca pilgrimages, it decided that a Committee should be named to draw up the required rules, composed of Members of the "Intendance Sanitaire," and Delegates that had formed part of the Conference, *viz*:—Feëzi Effendi, Ahmed Effendi, Eshreff Effendi, Dr. Merchand, Dr. Bartoletti, Dr. Fauvel, Dr. Millingen, and myself.

This Committee will meet to-morrow at the Health Office in Galata; I have, therefore, to request that your Lordship would be pleased to furnish me with any instructions that might be necessary for my guidance, more especially referring to Her Majesty's Indian subjects.

Dated 19th December 1866.

From—DOCTOR E. D. DICKSON,

To—*His Excellency* LORD LYONS, G. C. B., *Her Majesty's Ambassador at Constantinople.*

I have the honor to inform your Lordship that the Committee, appointed by the Board of Health to draw up rules for the preservation of the public health on the occasion of the next pilgrimage to Mecca, met on the 13th and 17th instant. Salih Effendi's communication to the Porte (*see* my Report dated the 12th instant); the measures proposed by Colucci Bey (*see* my Report dated 21st November); and those indicated by Ahmed Effendi, late President of the Hedjaz Commission, were read and fully discussed.

Copy sent to Foreign Office in Lord Lyons' No. 428 of same date.

Adopting the decision of the late Cholera Conference, Salih Effendi stated that cholera came from India; that this fact was confirmed by the history of last year's epidemic; and that the Conference had, in consequence, proposed to meet the event by establishing quarantine at the entrance of the Red Sea. But, as it would require time for the development of the plans proposed by the Conference, Salih Effendi suggested that, in the meanwhile, Sanitary Establishments might be organized on the coast of the Hedjaz for the purpose of inspecting arrivals from India, and subjecting them, when necessary, to restrictive measures: and that, should cholera notwithstanding break out afterwards, he recommended that the plan adopted during the last pilgrimage should again be resorted to, and arrivals from the Hedjaz put into quarantine at El-wedge and at Tor.

Colucci Bey's proposal is embodied in the following plan:—

Interrogatory at Mokha for all pilgrim-ships entering the Red Sea. Performance of 15 days' quarantine at Massawa for vessels unprovided

with a Bill of Health, for those that have not submitted to the interrogatory at Mokha, and for those in which cases of cholera have occurred. Communications by sea, between the Hedjaz and Egypt, to be strictly interrupted whenever cholera breaks out in the former Province. Caravans returning from the pilgrimage to be put into quarantine at El-wedge; and arrivals by sea from the Hedjaz with *clean* Bill, to perform five days' quarantine at Tor or at Coseir.

The Egyptian Board of Health having submitted Colucci Bey's proposal to the Viceroy for approval, His Highness objected to that part of it which affected places beyond his rule, and limited the measure to arrivals coming from the Hedjaz into his own dominions.

Ahmed Effendi's plan, for the prevention of future outbreaks of cholera in the Hedjaz, resolves itself into two proposals, *viz.*:—The establishment of restrictive measures at Bab-el-Mandeb, to stop the introduction of cholera into the Red Sea; and the adoption of a well organized system of hygiene in the Hedjaz,—the last more especially with a view to diminish the liability of the pilgrims to epidemic manifestations. To these he added (for meeting principally the case of the present year) a recommendation that, instead of performing, as usual, the pilgrimage to Mecca first, and then that to Medina, pilgrims who arrive in the early part of this season should be invited to go at once to the shrine of Medina (the time of performing this ceremony being optional, and Medina being about 10 days' march from Mecca), and afterwards proceed thence to Mecca, where the ceremony must take place during the Courban Bairam. This would shorten their stay in the Hedjaz, and enable them to return homewards, this year, before the season of the great heat at Medina and Yambo.

Ahmed Effendi, having observed that the effluvia arising from the immense concourse of persons assembled at Mecca during the sacrifices taints the air, has further recommended the revival of the old rule which forbad pilgrims staying more than four or five days in that city. He urges, moreover, the necessity of widening the alley that leads through the valley of Mina, and which becomes so crowded in the procession to the sacrifices that, should an unfortunate pilgrim fall to the ground, *he is instantly trampled to death* by the overwhelming mass of people pressing forward over him. Ahmed Effendi said that even camels and donkeys had been trampled to death in this way. He would forbid the consumption of an offensive kind of dried fish brought by the Javanese, and used as food. He thinks that vessels carrying pilgrims from the Hedjaz to Egypt should be limited in the number of their passengers according to their capacities. And, finally, insists on the advantages that would result from the construction of a Railway between Medina and El-wedge for the more ready and safe conveyance of pilgrims on that route.

The Committee, having considered all these proposals, and the various circumstances connected with the pilgrimage to Mecca, declares its incompetency to order measures for preventing cholera being imported from India into the Red Sea, and leaves the solution of that question to the Powers that took part in the Conference. It has, therefore,

limited its recommendations to simple measures of hygiene among the pilgrims; to a quarantine at Jedda upon such vessels as shall arrive with cases of cholera on board; to the nomination of a Commission in the Hedjaz to carry out its recommendations; and to the providing of sufficient Military and Naval means for enforcing them. The Committee has, therefore, treated the subject under four heads, *viz*:—

1.—Arrival of pilgrims in the Red Sea.

2.—Sanitary measures for the Hedjaz.

3.—Return of pilgrims.

4.—Local Commission entrusted with the execution of what is ordered.

1.—In order to diminish, as much as possible, the chances of introducing cholera from India by the Indian pilgrims, a surveillance will be exercised over pilgrim-ships on their arrival at the ports of Mokha, Hodeida, Confuda, Jedda, Yambo and Reis; and those vessels which are infected with cholera will have to perform quarantine, if possible, at Jedda.

2.—The sanitary measures will be applied in all the localities frequented by the pilgrims. Their chief object will be the removal of filth; the providing shelter for the indigent; the prevention of overcrowding; the construction of public latrines; and also of pits at Mina, to receive the offal derived from the sacrifices; the providing stores of provisions, and an ample supply of water,—more especially at Mecca, Medina, Jedda, Yambo and at El-wedge.

3.—The Indian and Persian pilgrims returning homewards will not be interfered with, further than to prevent their overcrowding on board ship; nor will anything be required of the caravans going to Damascus; since experience shows that cholera has never yet penetrated into Syria through the desert route. A surveillance, however, will be exercised over them while they are passing the frontiers. The real danger of propagating cholera to Europe from the Hedjaz lies in the road through Egypt. The Committee has, therefore, recommended the Porte to invite the Viceroy of Egypt to take efficacious measures for preventing its introduction into his dominions.

4.—A long Commission has been named for the purpose of carrying out the above measures; and will be composed of a Director, and a Physician (of course, Mussulmans) to reside at Mecca; a Christian Inspector and a Christian Physician to reside at Jedda; five Mussulman Physicians to be stationed at Medina, Yambo, Confuda, Hodeida, and Mokha; and a Christian Physician placed at El-wedge, to watch and report to the Board of Health at Constantinople passing events. El-wedge being under the jurisdiction of the Viceroy of Egypt, this Officer will not be required by the Board to take an active part.

The salaries and allowances of these Officers have been fixed as follows:—

The Director and the Inspector each to receive a salary of 8,000 piastres a month; and a sum of 15,000 piastres for travelling expenses.

And each physician to be allowed a salary of 5,000 piastres a month; and a sum of 7,000 piastres for travelling expenses.

The Commission will be assisted by the presence of a sufficient land and naval force to maintain order, and its functions will cease at the termination of the present pilgrimage.

I beg to enclose a copy of the Committee's Report, which has to be submitted by the Board of Health to the Porte for its sanction before it can be carried into execution.

The closing of this Report may offer a fitting opportunity for mentioning to your Lordship a desirable measure under our own control, which, I think, might be adopted with advantage.

I am informed that Her Majesty's Agent and Consul General in Egypt nominates a British Medical Delegate to the Alexandria Board of Health. I would suggest, then, that this Officer directly, or through the proper channel, keep Her Majesty's Embassy promptly informed of any circumstances within the control of the Alexandria Board which may affect our interests, or be calculated to invite discussion here. During the last and this year great anomalies have occurred, affecting our commerce,—such as putting arrivals from Alexandria with reputed *clean* Bills of Health into quarantine on mere report of cholera in Egypt, &c.

The uncertainty also of our knowledge here concerning the sanitary state of Egypt at any particular time is a fact well known to your Excellency. I, therefore, feel that it would be very much more satisfactory to me, as a member of this Board of Health, to be timely and independently informed of all such matters as are likely to come before it from Egypt.

REPORT OF THE COMMISSION ON THE QUESTION OF THE MECCA PILGRIMAGE IN THE YEAR 1867.

The Members of the Commission were as follows :—

MM. Feozi Effendi, Eshreff Effendi, Ahmet Effendi, Dickson, Fauvel, Marchand, Millingen, Testa, and Bartoletti, *Reporter*.

TO THE SUPERIOR BOARD OF HEALTH, &C.

GENTLEMEN,—The Commission appointed to institute emergent enquiries on the question of the Hedjaz, and to suggest what measures should be adopted on the occasion of the approaching pilgrimage, has the honor to submit its Report.

The Commission having proceeded with regularity, in order to arrive promptly at a practical result, has passed in review all the different proposals which have been made on this subject; such as the

suggestions of His Excellency Salih Effendi, and the Egyptian Sanitary Board, as also some Reports submitted by Ahmet Effendi, who has returned from his mission to Mecca.

The Commission has also received valuable oral information from the latter, which agrees for the most part with the views entertained relative to the Hedjaz with those belonging to the Commission, who were also Members of the International Sanitary Conference.

After bringing the different propositions to a rigid examination, and separating those which appeared to the Commission to be impracticable in the present state of things, the Commission has limited itself to four groups of questions, which measures will, in their opinion, be quite enough to meet the emergency.

Such are the questions which have a bearing on the arrival of pilgrims from India in the Red Sea, on the hygienic conditions of the places of pilgrimage, and return of the pilgrims *viâ* Egypt, as also on the sending of a temporary medical mission to those places.

1*st Question.*—Measures applicable to the arrival of Hindoo pilgrims, to prevent the importation of cholera into the Hedjaz.

Every one is aware at the present day that the cholera is imported into the Hedjaz by pilgrims who arrive from India, where that disease exists in an endemic form.

In accordance with this theory, the International Sanitary Conference have proposed the erection of a large quarantine establishment in the latitude of Bab-el-Mandeb, where the pilgrims can be isolated before entering the Red Sea, for when once the Straits are passed surveillance becomes impossible, unless at a great expense. The Commission on that point cordially agrees with the Conference ; but a dependent establishment, possessing as it does certain peculiarities that would necessitate the co-operation of several Governments who feel any interest in these measures, to be well conducted, must not be hastily got up, but the pressure of time and circumstances are such that the Commission must acknowledge the impossibility of adopting any serious and beneficial measures this year as regards quarantine. Though it is not to be inferred from this that nothing can be accomplished, except the diminution of choleraic importations. The Commission proposes in consequence to subject to quarantine measures those vessels carrying Indian pilgrims, among which measures it shall be signified before their arrival that the cholera has manifested itself on board.

Quarantine should be in that case practised in the environs of Jeddah, or upon another isolated spot on that portion of the Arabian sea-board, should there be a suitable one. But non-choleraic importations should be freely admitted throughout the sea-board. There would be a necessity of creating, in regard to this matter, places of observation at Mokha, Hodeida, Confuda, and Jeddah, and further to the northward at Yambo and Reis. We shall see further on what will

be the requirements of these places, according to the localities, and to meet the wants of navigation.

2nd Question.—Hygienic measures to be taken in the localities where pilgrimages are made.

Hygienic measures are of very great importance in reference to pilgrimages. They contribute powerfully to restrain the ravages of the cholera imported from another locality. The International Sanitary Conference has pronounced a very emphatic opinion on the subject. It has recognized the usefulness of the measures which have been taken last year by the Ottoman Commission. The instructions of that Board have, in a great measure, been executed, with the concurrence of the local Authorities, by the Commission presided over by Ahmet Effendi. It is then evident that these measures must be on a large scale and continuous. They are to consist chiefly in causing the filth, which is accumulated in places where many pilgrims are congregated, to be carried away; procuring shelter for those mendicants who throng the streets and mosques; in constructing wholesome water-courses and public latrines, and keeping them in a proper condition; digging pits for the purpose of burying the debris of animals which have been killed during feast days; and, above all, in supplying provisions for those places where there are great gatherings of pilgrims. The reports of Ahmet Effendi treat upon most of these important questions, with the exception of some few whose application is not immediately necessary, and the execution difficult. The Commission thinks that the Sublime Porte should earnestly recommend those measures being practised by the Authorities of the Hedjaz, as also in specially insisting on the necessity there is for establishing commissariat stores in the chief stations where the pilgrims congregate, either when going and coming, such as at Jeddah, Mecca, Medina, Yambo, as also at El-wedge, which will be alluded to further on.

Last year's experience having proved the good results of the measures which have been adopted, as also the good-will of the local Authorities, and specially of the Grand Sheriff and Governor General of Mecca, who have co-operated most cordially with the Commission sent to the Hedjaz, it is to be hoped that this concurrence will not be wanting for the future.

But it does not merely suffice to send orders to the local Authorities in order to attain the end in view; we must also take cognizance of the measures which will be indicated in the 4th group of our propositions.

3rd Question.—Measures to be adopted on the return of the pilgrims *viâ* Egypt.

The pilgrimage to Mecca and Medina being accomplished, the pilgrims will return to their homes by different routes, the Hindoos, and most of the other pilgrims, proceeding *viâ* the sea.

With the exception of overcrowding on board, the Commission need not occupy itself with the pilgrims. Another portion of the

pilgrims travel *viâ* the desert in following the Damascus route. No case has yet been instanced where cholera has penetrated into Syria by that route. Without enquiring into the causes of that immunity, and admitting such to be really a fact, the Commission thinks that it would be as well to continue to adopt the usual precautions on the borders of the desert, and to be prepared for anything that may happen. The route *viâ* Egypt now remains; and it is from thence that danger is to be apprehended. The Commission does not think that it is necessary that it should state what measures should be adopted, as regards Egypt, against a choleraic invasion. It also does not think itself called upon to discuss the propriety, or otherwise, of the measures proposed by the Egyptian Sanitary Board without the consent of the Commission;—the Superior Board of Health should confine itself to the question of proposing to the Imperial Government to move Egypt to adopt these precautions, in order to prevent the cholera from invading the Egyptian soil when the pilgrims return.

The return of the pilgrims *viâ* Egypt can be effected either by sea or land. In either case, the most convenient place for quarantine, in supposing that cholera has broken out amongst them, is El-wedge.

The International Sanitary Conference has found that this locality possesses every thing that can be desired, provided that care be taken to collect a sufficient supply of provisions.

The Commission is consequently of opinion that El-wedge is well able to meet the end in view. Moreover, as this locality appertains to Egypt, that Government must be asked if they will agree to receive the pilgrims. But on this point, as well on all others which have any relation to Egypt, it is the Sublime Porte who will have to treat with the Viceroy.

The Commission does not think it necessary to speak in detail on the operations of the embarkation and disembarkation of pilgrims, conditions of the voyage, and their arrival in quarantine ports,—all these details having been provided for and regulated by instructions that the Commission of the Hedjaz had received last year, and which are still applicable this year.

4th Question.—On the expediency of sending a medical staff to those localities.

To ensure the due performance of the measures which have been pointed out by us, *viz.*, quarantine and hygienic meansures, a medical staff must be stationed at the most important points of the Yemen and Hedjaz, in the interior and at the sea-board. The Commission proposes sending a medical staff, which will consist of the following:—

A Director and two Mahomedan Doctors to be stationed at Mecca.

An Inspector and a European Doctor for the purpose of being located at Jeddah.

Five Mahomedan Doctors to be stationed at Mokha, Confuda, Hodeida, Medina and Yambo. A European Medical Officer to be stationed at El-wedge for the purpose of observation only.

In all: one Mahomedan Director, a European Inspector, seven Mahomedan Doctors, and two European Doctors.

According to the past year's experience, it has been demonstrated that Christian medical men can only prove useful at Jeddah; the Commission has, under those circumstances, thought it necessary to propose sending Mahomedan Doctors every where except at Jeddah and El-wedge. The President will reside at Mecca, and the Inspector at Jeddah; the latter will have the special charge of the sea-board.

The Commission proposes to give the Medical Director and Inspector a monthly salary of 8,000 piastres, and 15,000 piastres each for their travelling expenses; to the Doctors 7,000 piastres for travelling expenses, and 5,000 piastres as their monthly salaries.

The medical mission under contemplation will only be a temporary one whilst the pilgrimage lasts.

The medical staff will have to return immediately afterwards. The instructions to be laid down for that service will be the same as those the Commission had in force last, with the exception of some modifications, which will be found in this Report.

Recapitulation.—The Commission proposes—

1*st.*—To place under quarantine measures, in the neighbourhood of Jeddah, all vessels carrying pilgrims on board in which cholera shall have manifested itself, and to allow free intercourse to all other vessels.

2*nd.*—To complete the hygienic measures that have been applied during the past year, according to the instructions of the Sanitary Board, and in accordance with the Reports of Ahmet Effendi.

3*rd.*—To ask the Sublime Porte to send emergent orders to the local Authorities to carry out the execution of all these measures, with authority to incur the necessary expenses.

4*th.*—To specially recommend to Government the question of making suitable provision for articles of consumption, and the establishment of depôts, for cereals, at Jeddah, Mecca, Medina, Yambo, and at Elwedge; and recommend the latter place to the energy of the Viceroy of Egypt.

5*th.*—To propose also to the Sublime Porte that a number of tents should be provided at every place where there is a large congregation of pilgrims, such as at Jeddah, and the valley of Mena and Yambo, &c.

6*th.*—To insist on the necessity of providing a Military force, both by sea and land, for the purpose of maintaining order; two armed steamers would be sufficient to guard the seaport towns of Jeddah and Yambo at the arrival and departure of the pilgrims. These vessels could also be placed at the disposal of the Inspector, with a view to his proceeding on tours of inspection to the sea-board, as also for the purpose of prosecuting the necessary enquiries that may be needed

in regard to the final organization of a sanitary service for the Red Sea.

7th.—To nominate a medical staff under the authority of the Director and Inspector, to carry out the quarantine and hygienic measures, according to the instructions they may receive from the Superior Board of Health. This mission to be temporary, and to be paid agreeably to the rate before mentioned in the 4th Article of the present Report.

8th.—As it is presumed that it will not be an easy matter to collect the required number of Mahomedan Doctors at Constantinople, the Medical Director will be authorized to recruit some in Egypt for the purpose of locating them at the seaports of Mokha, Hodeida and Confuda; and should Egyptian Doctors not be procurable, to employ some of the medical practitioners who may be found in these localities.

9th.—To ask the Egyptian Government for five or six Arabian Doctors to accompany the caravans on their return to Syria and Egypt, as it was done during the past year.

BARTOLETTI,
Reporter.

CONSTANTINOPLE;
The 11th December 1866.

Dated 1st January 1867.

From—His Excellency LORD LYONS, G. C. B., *Her Majesty's Ambassador at Constantinople.*

To—Colonel STANTON, C. B., &c., &c., &c.

With reference to the *Procès verbal* of the meeting of the Egyptian Board of Health on the 1st August last, which was inclosed in your Despatch to me, No. 56 of the 13th of the same month, I transmit to you a copy of a Report addressed to me by Dr. Dickson, physician to this Embassy and British Delegate to the Constantinople Board of Health, and also a copy of a Report of a Committee of that Board on the subject of quarantine and of hygienic measures to be applied to the approaching pilgrimage to Mecca, &c.

Neither Dr. Dickson nor I have discovered in the proposals made by the Committee in this Report anything likely to be unnecessarily vexatious to British Indian pilgrims, or any thing to which we deem ourselves bound to make objection. The matter is, however, one which is of so much delicacy and importance, and which depends so much upon local circumstances, of which my knowledge is imperfect, that I shall be very much obliged if you will give me your opinion on the Report of the Committee as soon as possible. If there appear to you to

be any thing seriously objectionable in it, I beg you to let me know by telegraph.

I request you to take into consideration the suggestion made by Dr. Dickson, at the end of his Report, that your Delegate to the Alexandria Board of Health should keep the Embassy regularly and promptly informed of any sanitary matters likely to be of interest here. If you see no objection to giving effect to this suggestion, I beg you to give instructions accordingly to the Delegate. He might be authorised in cases in which speed is desirable, to write directly either to the Ambassador, or to Dr. Dickson under flying seal to the Ambassador, as well as to address telegrams to the Ambassador.

Dated 31st January 1867.

From—H. MERIVALE, ESQ., C. B., *Under-Secy. of State for India,*
To—*The Under-Secretary of State for Foreign Affairs.*

I have laid before the Secretary of State for India in Council your letter dated the 14th instant, forwarding a copy of a Despatch from Her Majesty's Ambassador at Constantinople, with its enclosures, relative to the measures of quarantine and hygiene which have been recommended by a Committee of the Board of Health at Constantinople for adoption in the Red Sea and the Hedjaz during the approaching season of pilgrimage to Mecca.

In reply, I am directed to state that Viscount Cranborne sees no reason, in the interests of the pilgrimage of Indian pilgrims, to object to any of the measures proposed by the Committee, it being understood that the measures are proposed for this year only, and that his assent to them on the present occasion will extend no further than the present season.

The only subject on which Lord Cranborne would wish to reserve his opinion is that which relates to the ports at which pilgrim ships entering the Red Sea are to be subjected to examination; and this point, His Lordship is quite willing, should be decided by the judgment of Colonel Stanton, to whom he observes the Report of the Committee has been forwarded by Lord Lyons for consideration.

P. S.—Lord Lyons' Despatch No. 1 (Commercial), dated 1st instant, is returned herewith as desired.

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 32, OF THE 1st OF SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its 32nd meeting at Galata-Serai on the 1st of September 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor to the Internonciature of His Imperial Majesty the Emperor of Austria.

Dr. Sotto, Physician attached to His Imperial Majesty's Internonciature, Director of the Austrian Hospital.

For Spain:

Dr. Monlau, Member of the Spanish Superior Council of Health.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician for France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, and Delegate from Great Britain to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp-General of His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Dr. Bernardino Antonio Gomez, Councillor and Chief Physician to His Most Faithful Majesty.

For Prussia :

M. le Baron de Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, and Chief Physician of the Ottoman Marine Hospital.

For Russia :

Dr. Pelikan, Minister of State, and Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Minister of State, and co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway :

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, and Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey :

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, and Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, and Member of the Superior Council of Health at Constantinople.

For Egypt :

Dr. Salem Bey, Clinical and Pathological Professor in the Cairo School of Medicine, and Private Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi, one of the Secretaries, read the Proceedings of the 30th meeting, which were unanimously agreed to.

M. le Comte de Lallemand asked permission to read extracts from some notes drawn up by a French Officer, referred to by him at the last meeting.

M. le Comte de Lallemand wishes that these extracts may, in consideration of the interest they possess, be inserted in extenso in these minutes.

Notes drawn up by the Captain of the Frigate "Salmon," now commanding the French sloop-of-war, the "Surcouf," upon Perim, Obok, Bab-el-Mandeb, and Tadjomah or Tadjonlah.

"*Perim.*—An English island 98 miles from Aden, an harbour incapable of affording shelter to many vessels at a time (two or three.) Little or no water. The English have erected a distillery to meet the wants of a future garrison. Very little vegetation. Volcanic soil (basaltic). In addition to the light-house already existing there, it would be necessary to have a light at the entrance of the port, and some buoys in the harbour. The island produces nothing, but vessels could obtain a supply of provisions at Aden, where they would touch the evening previous to their arrival at the lazaretto.

"In case it should be the intention of the International Conference to *compel* all vessels coming from India to stop at a sanitary establishment, Perim is the only place which combines all the requisite conditions, for every vessel entering the Red Sea is obliged to sight this island. Perim, therefore, would be the first spot to select.

"*Camaran.*—An island situated in the Red Sea on the Arabian coast of Yemen, 170 miles from Perim, and about 40 miles from the direct route followed by vessels proceeding from India to Suez. Good anchorage, excellent water. In 1865 the sloop-of-war *Surcouf*, overtaken in a gale off the islands of Zebayer, took shelter to the east of the island of Camaran, off the village. The vessel was detained there for three days by a gale of wind, but held on very well by a single anchor. The anchorage is excellent.

"The sanitary establishment could be established to the east of the village opposite the anchoring ground. But it would be indispensably necessary to erect a light-house on the hill to the south of the island of Camaran, and a smaller one at the point called Rass Bayah.

"*Obok.*—A bay which affords an anchorage under shelter of the reefs on the coast of Abyssinia, 45 miles from Perim outside the Red Sea, 120 miles distance from Aden, and nearly 40 miles away from the route followed by vessels proceeding from India to the Red Sea; good *deep* anchorage, good enough to *resist* any gales; good water and almost sufficient in quantity; also a valley which produces good fuel, woods of immense trees, and through which large caravans of cattle and camels pass, &c. No habitations; temperature between 30 and 40 degrees centigrade; thermometer above zero during the months of June, July, and August; rains plentiful in January, February, and March.

"This port would be sufficiently suitable for the purposes of a sanitary establishment, but it would be necessary to remove a portion of the reefs at the entrance, and a small light might be fixed upon one of those reefs in order to render the entry of vessels practicable at nights.

"Establishment should be protected in an enclosure.

"*Bab-el-Mandeb.*—To the south of Bab-el-Mandeb the coast forms a bend, which is called the Bay of Heighgha.

"It often happens that vessels desirous of entering the Red Sea seek for shelter into this bay, if the north winds are so violent as to hinder them from running through the Straits. But it is not a good harbour, nor even a safe anchorage, because it must be abandoned as soon as the wind veers to east and south, or even south-west.

"The inverse description holds good of the anchorage which is found to the north of the Cape of Bab-el-Mandeb, where vessels often have to shelter in order to await the subsidence of strong southerly winds before attempting to leave the Red Sea.

"*Tadjonlah.*—Tadjonlah is situated on the African coast. Dangerous anchorage, close to the edge of a reef. It is true that near that place a charming spot will be found at Embolo, with water and vegetation, but no vessels can anchor there with any degree of safety."

August 1866.

Thanks were returned to M. le Comte de Lallemand.

The order of the day having reference to the continuation of the discussion of the report on the measures to be adopted in the east, &c., which was adjourned at the last meeting at page 29, His Excellency the President permitted Dr. Fauvel to continue the reading.

Dr. Fauvel stopped at page 31.

Dr. Dickson opposed the project of instituting international lazarettos or Commissions in the Red Sea. Under other circumstances he had already had occasion to explain his reasons for opposing institutions of this nature both in Europe and in the Red Sea, and he would not recur to them again.

He would simply observe that if the Conference adopted the plan of having a non-international sanitary institution in the Red Sea, it was to Egypt that its direction and superintendence should be entrusted.

M. Keun was of a different opinion. The Ottoman Government, he thought, should have this right, according to those very circulars which had convened an International Sanitary Conference. In fact, said M. Keun, if those circulars were consulted, it would be seen that the right to put into execution the measures proposed by the Conference had devolved upon the Governments of those countries where they should be applied. Independently of that these measures would not be of any efficacy if they were not executed by the Ottoman Government.

The Mussulmans, according to M. Keun, would with very great difficulty agree to subject themselves to any measures to be carried into effect by any other authority than that of the Ottoman Government, if non-Mussulman employés and Doctors were authorized to enforce them.

M. Keun thought that the measures in question would never be seriously enforced; but this right, he added, which cannot be contested as belonging to the Sublime Porte, does not imply the inadmissability of control on the part of the other Governments. On the contrary,

M. Keun was of opinion that such control is necessary, and even indispensable.

Dr. Goodeve gives his support to those who oppose the institution of an International Commission to be established, with its head quarters at Suez.

He believes with M. Keun that, as the measures to be adopted relate principally to the Mahomedans, the restrictions regarding their pilgrimages would be received and accepted with less repugnance if they emanated from Mussulman authorities, than if they were carried out by other authorities professing a different creed. But Dr. Goodeve believes that it would be preferable to leave the regulation of sanitary matters in the Red Sea to the Egyptian Board of Health, strengthened, if thought advisable, by the Delegates of those powers not represented in the Council Board Conference as organized at present.

M. Kalergi observes that these objections are not radical, as they have no reference to the principle propounded by the Commission, *viz.*, that of an International Commission. In reality, he urges that Dr. Goodeve himself accepts the principle, the objections made referring to a matter of detail. Some wish the Sanitary Board of Health at Constantinople to have the surveillance, others that this surveillance should devolve on a mixed Council of Health at Alexandria. The Conference, he thinks, should not trouble itself about this question, for all that the Commission asks for is the institution of a mixed Council to supervise, near the spot, the new service which it is proposed to organize in the Red Sea.

Dr. Goodeve, in reply to M. Kalergi, said that he would willingly admit the necessity of a surveillance, but he does not admit any similarity between the existing Egyptian Board of Health and the International Commission spoken of in the Report. The Egyptian Board of Health is a local Egyptian Commission, in which it is true that Delegates from other countries are also included, but which does not possess the character that it is proposed to give to the International Commission. This Commission, Dr. Goodeve believes, could not have the same power as the Board of Health, which acts in co-operation with the Government of the country. He does not think in other respects that the distance between Suez and Alexandria is such that the Egyptian Sanitary Board could not vigorously act in the Red Sea; there would therefore be no necessity to instal a new Commission at Suez.

M. Stenersen pronounces in favor of the Reports. He finds that every thing that has been urged and proposed is very much to the purpose, and he cannot but approve. He would wish even, in order not to act in opposition to the Report and the general views therein taken, that all discussion of detail should be avoided. These details, he thinks, should not for the present furnish matter of discussion.

M. Mühlig is of the same opinion as M. Stenersen. The subject, said he, not being susceptible of discussion in regard to detail, it would be well to come to a proper understanding as to the fundamental principles. What are these principles? In order to ward off a fresh invasion of

cholera, we must establish a barrier in the Red Sea. Now, observes M. Mühlig, all discussion which would deviate from that principle would be out of place. It cannot be a question as to the means of ascertaining how we must undertake to establish such a barrier. There can be no difficulty in ascertaining what should be done to establish this barrier, for that is only a question of competency, which will be solved in favor of the power possessing the right.

Dr. Salem Bey tenders some information on the nature and organization of the Egyptian Board of Health. It is a mixed Council which exercises the greatest independence and authority. After speaking of its constitution and organization, Dr. Salem Bey adds that it offers the best guarantees for success, in consequence of its immediate proximity to the localities which it is proposed to supervise, and that it is the only one that could carrry out the measures proposed in an efficacious and complete manner.

It is conversant with the language of the country, and has besides the consent of the public and support of the local authorities, which alone have the power to enforce new regulations.

The Commission, continues Salém Bey, sent to the Hedjaz was forced to acknowledge its want of power owing to its distance from the central authority. Independently of this, it is the interest of Egypt, more than of any other country, that preservative measures should be energetically applied; and Egypt will, more than any other Government, feel interested in the success of a work which has for its object preservation against fresh invasion. Consequently, the means that she has at her command, combined with the advantages which she possesses on account of her close proximity to the localities to be supervised, the identity of manners, language and religion with those of the pilgrims for whom it is in contemplation to legislate, give it, together with the necessary authority, the right to the superintendence of the surveillance which is the subject of the report.

Dr. Salem Bey begs to be permitted to call the attention of the hon'ble Conference to the fact that Egypt has for a long time made rapid strides in the east in the march of progress and civilization, and that the Viceroy, animated by the best sentiments and inspired by the most enlightened ideas, endeavours to follow the footsteps of a friendly Government, which is looked upon with admiration by the whole world.

Dr. Salem Bey concludes that, as it is in contemplation to institute an international administration, Egypt, considering both her geographical position and the vast means which she has at her command in the very places where it is considered necessary to adopt and execute new preservative measures, can offer more satisfactory guarantees than any other Government for the efficient direction of the sanitary service which it is intended to establish in the Hedjaz.

Besides, he observed, Egypt is already possessed of a Board of Health possessing an international character. This Board could be

enlarged, and from amongst its members a Commission could be selected for duty in the Hedjaz, which would thus be, as it were, a direct emanation from the International Board of Health, with this difference only, that it would not be a stranger to the country, notwithstanding its mixed character.

Dr. Bartoletti observes that the Conference has made it its special duty to study the origin of the cholera, and to find means for the prevention of fresh invasions in the Hedjaz, into which the pilgrims now convey it periodically from India. One of these means would be to inspect vessels at the Island of Perim, the only spot where this inspection could be properly carried into effect. The second means would be the erection of a lazaretto at the entrance of the Red Sea, in a locality suitable for a cholera quarantine, and the choice of which could only be made after some further enquiries. The Ottoman Government, said Dr. Bartoletti, has sent to the Hedjaz a Commission expressly instructed to prosecute these enquiries, which shows that that Government is inclined to admit the advantage of the principle of having such establishments. These two propositions of the report being consequently conformable to the views of the Ottoman Government, Dr. Bartoletti does not hesitate in giving them his support. The third proposition, he said, consists of having at Suez a mixed Council which will have entire control over the sanitary service of the Red Sea, in which will be included the quarantine to be established near Bab-el-Mandeb. Dr. Bartoletti believes that the Board of Health at Constantinople could readily fulfil its task, were it not for the difficulty that would be experienced in exercising its power at so great a distance. A Board analogous to that at Constantinople, but to be established at Suez, appears to be the best means for accomplishing such an object. That Board should have entire control over the sanitary service of the Red Sea, and the sea-board lazarettos should be administered immediately under the sanitary authorities of their respective countries. As these conditions do not differ materially from those of the Turkish sanitary establishments, Dr. Bartoletti considers that the purport of the report is in consonance with his views, and having no objection to urge, he adheres to it, as he does to the two preceding ones.

His Excellency Salih Effendi entirely supports the views enunciated by Dr. Bartoletti.

Professor Bosi is of opinion that the Commission has met the question as far as possible. It has not wished to enter upon the ground to which Drs. Goodeve and Salem Bey have wished to lead the Conference, that is to say, it has preferred to leave unsolved the question as to which Government will have to carry out the execution of the measures suggested by it. The Commission, said Professor Bosi, not having touched upon the question, it was not right that a discussion should have taken place upon it.

Dr. Fauvel believes that the Commission has done right in not having entered deeper into the question, and only touching upon it with every reserve. It was not for the Commission, said Dr. Fauvel, to

decide whether the right to apply those measures suggested by it devolves on the Egyptian or Ottoman Government. This right, he thinks, devolves on the Government in whose territory the new measures are to be adopted. This Government will be either Egyptian or Ottoman, and it might also be the English Government, if it be resolved that the surveillance or direction should be established on the island of Perim. Dr. Fauvel therefore has nothing to urge against the observations of Dr. Bartoletti. He does not wish to enter into the question of competence and right, either as regards the Ottoman or any other Government; the Commission not having judged it necessary to raise the question when it suggested the introduction of these measures.

At the instance of several Delegates, His Excellency the President put to the vote the text and conclusion of the 2nd paragraph of the 6th section of chapter the 3rd.

The Conference adopted them by a majority of 15 votes against 3, and 2, who did not vote.

Those who voted in favor were MM. Monlau, Spadaro, de Lallemand, Fauvel, Kalergi, Maccas, Salvatori, Bosi, Sawas, Mühlig, Pelikan, Hübsch, Stenersen, Bartoletti, and His Excellency Salih Effendi.

Against—Drs. Goodeve, Dickson, and Bykow.

Those who did not vote were MM. Keun and Millingen.

Dr. Fauvel continued the reading of the Report until the 7th portion of the 3rd chapter (page 31).

Dr. Monlau asks permission to make a few remarks. He cannot accept, he said, the distinction made in the Report between the vessels freighted with pilgrims and ordinary packet-boats. It is in contemplation to adopt precautionary measures against importations of cholera by sea. The Report says that the danger exists as much in regard to vessels freighted with pilgrims, as other vessels. Dr. Monlau does not perceive wherein the distinction lies between these two classes of vessels, and the favorable circumstances alleged in regard to packet-boats do not appear to him to be to the purpose. Has the examination, asks Dr. Monlau, any other object in view than to prevent the entry into the Red Sea of all infected vessels? And could not vessels which do not transport pilgrims, as well as any other vessels, be the means of propagating the disease?

In consequence, Dr. Monlau proposes that the examination as well as quarantine measures must be rigorous for all vessels without distinction, packet-boats being also included.

Dr. Bartoletti, in reply, observes that the pilgrims do not go to Egypt, but to Jeddah, and that they have other ports of debarcation. The pilgrims who proceed towards Mecca will undergo quarantine at the entrance of the Red Sea, and the vessels intended for Egypt must do so at Tor.

Dr. Goodeve differs entirely from the opinions advanced by Dr. Monlau. In his opinion the sanitary conditions of the steamers of the

Messageries Imperiales and of the Peninsular and Oriental Company differ entirely, as he had already stated, from those of the pilgrim vessels, and that, consequently, they require special treatment. Dr. Goodeve thinks that no risk would be incurred if the former were allowed to proceed on their voyage, even though they had cholera cases on board. He does not agree with the Commission, who would wish to detain them at Perim for examination, for this, in his opinion, would be to condemn them to a useless loss of time, and the best way would be, according to him, to allow them liberty of passage to their destination.

Dr. Sawas asks permission to make some observations upon the following passage:—"With a view to carrying out these measures with all the impartiality, intelligence, and firmness that can be desired, the Conference feels convinced that it will not do to leave their execution to the authority of any single power, (see page 31).

It appears to Dr. Sawas that the sense of this paragraph is contrary to what has been adopted by the previous speakers in regard to the paragraph preceding it.

It is clear, he thinks, that, according to the locality chosen, the management of the lazaretto and the application of measures should be entrusted to the power to whom the territory belongs. And the Conference could not decide otherwise, without acting in direct antagonism to the circular of the Foreign Minister of France, as well as to the circular by which the Sublime Porte convoked the Conference. Dr. Sawas having voted, he said, for the preceding paragraph, was anxious to vote for this one also. He would vote, therefore, under reservation, for the reasons above given.

M. Stenersen thinks that a practical solution of the problem is possible, and he cannot agree with the Commission in saying that it is to be feared that such a solution is unattainable.

Dr. Fauvel refutes in a few words the observations made by Drs. Monlau and Goodeve, and the objection raised by Dr. Sawas. Dr. Fauvel is quite of Dr. Goodeve's opinion, that no comparison can be instituted between pilgrim vessels and the regular packet-boats. These latter, observes Dr. Fauvel, have never yet imported cholera, and never touch at any port in the Red Sea. These circumstances afford sufficient guarantee to authorize them, after inspection, to continue their voyage. There are, continued Dr. Fauvel, some other circumstances which militate in favor of steamers. As they are well-equipped, and not over-crowded, the passengers, if required to undergo quarantine, are in a position to remain on board until they reach their destination, whereas pilgrim vessels proceed everywhere, and the passengers disperse wherever they like.

If mail steamers, said Dr. Fauvel, alone were in question, there would be no occasion for lazarettos. The route pursued by these steamers is well known, they proceed from Aden to Suez; but the case is very different with pilgrim vessels, as wherever they make their appearance the pilgrims sow the seeds of cholera along their path.

Dr. Fauvel, though agreeing on this point with Dr. Goodeve, does not do so as regards the inspection of steamers. Dr. Fauvel thinks that this inspection cannot be prejudicial to them, nor entail any loss of time, and cannot in any manner inconvenience them; still it is not a condition upon which the Commission insists rigidly, as the measure has been mainly suggested with a view to the welfare of the packets, and to save them much inconvenience. The Conference can suppress this clause if it be thought superfluous.

Lastly, Dr. Fauvel points out to Dr. Sawas that the phrase he objects to is not at all contradictory to the circulars alluded to by him. The Commission has fully admitted that some power must be charged with the formation and management of a quarantine establishment at the entrance of the Red Sea, under the surveillance of a mixed International Council Board. The supervision and assistance of Europe does not imply, said Dr. Fauvel, the diminution or cessation of the rights which accrue to the power to which the locality belongs. No other end is contemplated than to secure the efficient working of the establishment and the carrying out of the prescribed measures.

Dr. Monlau thinks that Dr. Fauvel has not disposed of his objection; its force has not been weakened, as it has been shown that in order to preserve the Mediterranean Sea, efficacious measures must be adopted in the Red Sea. Dr. Bartoletti agrees with Dr. Monlau as regards inspection, but not as regards quarantine. Dr. Bartoletti would wish also that inspection at the island of Perim might be compulsory for all vessels, and proposes that this rule be laid down generally for all. M. de Lallemand, on the contrary, thinks that this assimilation is inadmissible, and could not be established without great injustice, for it is well known that there is a wide difference in regard to the danger to be experienced from pilgrim vessels and from Company's steamers.

At the general request, the text and conclusions were put to the vote and adopted by a majority of 17 against two.

Those who voted in favor were—MM. Monlau, Spadaro, de Lallemand, Fauvel, Kalergi, Maccas, Bosi, Salvatori, Keun, Sawas, Mühlig, Pelikan, Bykow, de Hübsch, Stenersen, Bartoletti, and His Excellency Salih Effendi.

Against—Drs. Goodeve and Dickson.

Dr. Fauvel continued the reading of the report to the 34th page on the subject of the pilgrimage to Mecca.

Dr. Salem Bey states that though he entirely concurs with the Commission in the fundamental principle of breaking off sea communication with Egypt, in cases when cholera manifests itself amongst the pilgrims, a measure which Egypt had adopted this year, he cannot subscribe to the conclusion of the report for the following reasons:—

The two stations which it proposes to establish on the Arabian sea board, one at Jeddah and the other at Yambo; and the two lazaret-

tos, one at El-Wedge for the pilgrims, and the other at Tor for ordinary arrivals, are not of a nature to meet the views of the Conference.

In fact, said Dr. Salem Bey, the port of El-Wedge, which is a suitable spot for quarantine, will not afford quarantine accommodation for all the pilgrims who return from Egypt, and who amount to at least 10,000 or 12,000 per year. Not to mention the transports, the mere condition of the harbour, and specially the want of a sufficient supply of water, and the over-crowding which would necessarily ensue, incapacitate it for answering the purposes of an important quarantine station, and still more so for being the one locality to be selected for the establishment of a great lazaretto.

Dr. Salem Bey, with the object of obviating all these inconveniences, proposes to modify the proposal of the Commission as follows:—

For the Arabian sea-board—

1*st*.—Besides the sanitary station at Jeddah, a lazaretto should be established near that town at Ragbeh, which is situated at a distance of six hours' journey from Jeddah, and possesses every desirable advantage for the purpose of establishing a lazaretto for the use of the pilgrims and other travellers.

2*nd*.—Besides the station of Yambo, a lazaretto should be established in the vicinity of that town, or even on the island itself, which is situated in the centre of the Yambo harbour. This lazaretto should be intended for those pilgrims who come from Medina, and who are desirous of embarking for Egypt.

3*rd*.—A lazaretto should be established at El-Wedge for the large number of pilgrims who proceed to Jeddah for the purpose of embarking for Egypt. This lazaretto could be used in case the cholera should manifest itself during the pilgrimage.

As for the lazaretto at Tor, which the Commission proposes for ordinary sources of cholera, such as the Indian steam-packets, the choice of a station of inspection should be made by the Egyptian Sanitary Board.

Dr. Salem Bey hopes to put himself in early communication with the Egyptian Government as to selecting the Springs of Moses, which are, in his opinion, best adapted for the purpose.

Finally, Dr. Salem Bey thinks that the three sanitary stations on the Arabian coast should be kept up and provided with a medical staff, as suggested by the Commission.

Dr. Fauvel regrets to see that Dr. Salem Bey is constantly changing his opinions and proposals, and considers that his indecision is the cause of the confusion that has occurred.

It was on the special proposition, said Dr. Fauvel, of Dr. Salem Bey that the Commission chose El-Wedge. He had affirmed that neither Tor nor Moilah would be suitable quarantine stations. This opinion perhaps was at that time according to his instructions. More recently he wanted to maintain that El-Wedge would not be at all a

suitable place for the establishment of a lazaretto, and that, under these circumstances, another place must be chosen instead. Where then would he look for such a spot? In the very places where cholera reigns, *i. e.*, Jeddah and Yambo, which on this very account, it is of importance, in the opinion of the Conference, to avoid by all possible means. But is it true, asks Dr. Fauvel, that El-Wedge does not meet the requirements of the case? By no means; one has only to read the Report in order to be convinced that El-Wedge unites all the conditions necessary for a quarantine establishment, *viz.*, a capacious and safe harbour accessible to large vessels, fresh water in abundance and of excellent quality.

As regards Jeddah and Yambo, continued Dr. Fauvel, in recommending that these ports should be well provisioned and stored with all articles of consumption needed by pilgrims, the Commission has thought to render them more useful than by establishing lazarettos. If the pilgrims found in these two cities provisions and those things which they stand most in need of, we could very easily prevent their disembarkation.

Still if the Conference, says Dr. Fauvel, admits the unsuitability of El-Wedge, they would have to select another spot between El-Wesch and Yambo. Between these two ports many others will be found where there is an abundance of drinking water, and where provisions could be easily supplied.

Dr. Sawas regrets that he cannot support Dr. Salem Bey, for it is evident, he says, that, according to his scheme, he would enforce the performance of quarantine in the very places where cholera is most prevalent.

At the instance of all the members, His Excellency the President put to the vote the text of this portion of the subject of the pilgrimage to Mecca.

It was unanimously adopted.

Dr. Fauvel continues the discourse till page 38.

Dr. Dickson offers a few remarks. He would wish that the first portion of the subject of the Mecca pilgrimage should be divided into two, and that the first part should end at page 36. As this portion only contains facts and information, it would, he thinks, be unanimously adopted, and he himself would have nothing to urge against it. But the case is different as regards the second portion, many details of which call for discussion; and as he cannot approve of many of them, he will be obliged to vote against them.

Dr. Goodeve speaks to the same purpose, and with similar reservation. He believes, moreover, that the station of Tor is very far from Suez. Dr. Goodeve is also of opinion that we must make further enquiries to ascertain if it is possible to find a spot nearer Suez suitable for the location of a lazaretto which will not be dangerous to Egypt.

At the instance of several of the Delegates, His Excellency the President put to the vote the text and the two first paragraphs of the

conclusion (page 38), reserving to himself the option of making some remarks upon the third paragraph of the conclusion.

They were unanimously adopted by the majority.

In favor—MM. Monlau, Spadaro, de Lallemand, Fauvel, Kalergi, Maccas, Bosi, Salvatori, Pelikan, Bykow, Bartoletti, and Salih Effendi.

Drs. Goodeve and Dickson voted in favor of the greater portion of the text, except that portion which has reference to the formation of an International Commission, and also in favor of the two first paragraphs of the conclusion, with a reservation in regard to Tor.

His Excellency Salih Effendi, with a view to render the third portion of the conclusion more conformable to the text, proposes to reproduce it in greater detail as follows :—

An Ottoman Board established at Suez, and assisted by an International Commission organized on the same footing as the Sanitary Board at Constantinople, will decide all questions regarding the sanitary service of the Red Sea, including that of Bab-el-Mandeb.

Dr. Bartoletti agrees to this modification.

Dr. Fauvel proposes to adjourn to the next meeting the examination of the modification suggested by His Excellency Salih Effendi.

The Conference agree to the above suggestion.

The meeting separated at 4½ P. M.

Order of the day for the next sitting.

Continuation of the discussion of the report.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. SITTING No. 33, OF THE 3RD OF SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding*

In the year 1866, on the 3rd of September, the International Sanitary Conference held its 33rd sitting, in the usual place of meeting, at Galata-Serai.

PRESENT:

For Austria :

Dr. Sotto, Physician attached to His Imperial Majesty's Internonciature, Director of the Austrian Hospital.

For Spain :

Don Antonio Maria Segovia, Consul General and Chargé d'Affaires.

Dr. Monlau, Member of the Superior Board of Health of Spain.

For the Papal States:

Dr. Ignatius Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, French Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major of the Indian Army, and Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, and Delegate from Great Britain to the Superior Board of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor of Medicine in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Board of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Delegate from the Netherlands to the Superior Board of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp-General of his Majesty the Shah, Councillor to his Legation.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d' Affaires.

Dr. Barnardino Antonio Gomez, Councillor and Chief Physician to His Most Faithful Majesty.

For Prussia:

M. le Baron Testa, Delegate from Prussia to the Superior Board of Health.

Dr. Mühlig, Physician to the Legation, and Chief Physician of the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Minister of State, and Director of the Civil Medical Department in Russia.

Dr. Bykow, Councillor of State, co-Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, and Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, and Chief of the Civil Medical Staff.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Service, and Member of the Superior Board of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Professor of Clinical and Medical Pathology in the Cairo School of Medicine, and Private Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The sitting was resumed at 12 A. M.

The Proceedings of the 31st sitting were read by M. le Baron de Collongue and adopted.

Dr. Mühlig, who was not able to stay till the close of the last sitting, intimates his adhesion to that portion of the Report adopted during his absence.

MM. le Baron Testa, Gomez, Stenersen, Sotto, and Baron Hübsch made the same declaration.

The discussion having been resumed on the last portion of the conclusion of section 7, chapter III, where it had been discontinued at the last sitting, His Excellency Salih Effendi remarked that this conclusion is not perhaps in complete harmony with the text. The mode in which it was drawn up could be modified, or, perhaps completed, thus: *An Ottoman Board, holding its sittings at Suez and assisted by an International Commission,* and organized on the same basis as the Board of Health at Constantinople *which should decide on all questions relating to the sanitary service of the Red Sea* comprising that of Bab-el-Mandeb. His Excellency Salih Effendi states that there is nothing in the conclusion so modified which is contrary to the text of the Report, it is only in the shape of a commentary, or species of interpretation; it is not, however, his intention to introduce an amendment, nor does he wish the Conference to deliberate on these modifications.

Dr. Fauvel explains the reservation which the Commission has thought it necessary to show. It thought, as it is said at page 37, that it would be advisable to confide the direction of the sanitary service of the whole of the sea-board of the Red Sea, comprising the straits of Bab-el-Mandel, to a special mixed Commission, but it has been careful in specifying that the executive power should be left to the authority which possess it of right. It is not within the province of the Conference to decide whether the Ottoman or Egyptian Government should exercise such power.

Dr. Salem Bey thinks that the Egyptian Board of Health, in reference to its mixed character, is the one naturally pointed out as the best fitted for being put in charge of the direction of the Red Sea sanitation; as for the executive power, it was well understood that it should, as the Commission says, be left to the power which may be entitled to exercise that right. In his capacity of Delegate from the Egyptian Government, Dr. Salem Bey does not admit the creation, otherwise useless, in his opinion, of a special Commission stationed at Suez, and distinct from the Egyptian Sanitary Board.

The last portion of the conclusion of the first portion of section 7 is put to the vote and adopted, *viz.*, 18 in favor, 4 against, and 3 abstentions.

In favor—MM. Sotto, Segovia, Monlau, Spadaro, Comte de Lallemand, Fauvel, Kalergi, Maccas, Vernoni, Professor Bosi, Chevalier Pinto de Soveral, Gomez, Testa, Mühlig, Pelikan, Stenersen, Hübsch, and Salem Bey (with reservation.)

Against—Drs. Goodeve and Dickson, M. Keun, and Dr. Bykow.

Abstentions—Dr. Millingen, Malkom Khan, and His Excellency Salih Effendi.

The second text of the 7th Section is then read.

The prescription of the Mahommedan law, which requires that whoever undertakes pilgrimage should be provided with sufficient funds for the journey, is, according to Dr. Monlau, whatever the Report might state, scarcely observed in Algeria. Among other facts which can be produced by him in support of his observation, Dr. Monlau cites that of a steamer, the *Méandre*, which put in at Valentia in the year 1866, and which had a great number of Arab pilgrims on board proceeding to Mecca. The state of misery and uncleanliness these poor people exhibited almost baffles description. Their fare was paid as far as Cairo, but they had barely enough means for providing for their daily wants; some were actually seen eating with great relish pieces of orange peel which had been thrown away by the other passengers.

Dr. Monlau thinks that it would be as well to call the attention of the French Government to these facts.

M. le Comte de Lallemand replied that the French Government was instituting enquiries into this important question. It was its intention to adopt the same plan in regard to Algeria as that which had

afforded such good results at Morocco, *i. e.*, to determine that each pilgrim should certify to his being possessed of a sum of 500 francs.

Dr. Salem Bey explains that the Algerians belong to the sect of El Malek, which only exacts from pilgrims that they shall be in sound health. It was impossible, however, not to applaud the measures just described—as about to be adopted by the French Government—the praise due to those measures which will be adopted by the French Government in the sense in which they have been indicated.

Dr. Monlau withdraws his remarks after the explanation tendered by M. le Comte de Lallemand.

Don Segovia adds that the fact cited by Dr. Monlau, as well as other similar facts, had been the cause of some complaints from the Spanish sanitary authorities. The French Ambassador at Madrid, to whom these complaints had been preferred, had promised, as M. le Comte de Lallemand has just done, that measures would be adopted to prevent a recurrence of the evil.

Dr. Millingen asks if we should not look more specially to the state of the pilgrims' health than to their ability to defray the expenses of the voyage. All the Imams invariably lay down as the first condition that the future Hadji should be in possession of sound bodily health. Should we not, under these circumstances, look to the healthy condition of the pilgrims at the time of embarkation, and prevent the departure of all those who are in an unhealthy condition.

Dr. Fauvel replies that this practice should form a part of the hygienic measures to be taken at the time of embarkation, and that the third Commission should not again re-open this question, as it has been already disposed of on a previous occasion.

Dr. Millingen suggests that the Report, in order to be complete, should have included Singapore with the Ottoman and Egyptian ports, when it speaks (at page 39) of the transport of pilgrims and the lamentable overcrowding too frequently permitted in the course of such transport.

The Ottoman and Egyptian ports are not the only ones where the transport of pilgrims presents the appearance of a greedy speculation. Singapore should also be placed in the same category.

The 2nd portion of section 7 is put to the vote and unanimously adopted. (24 members voted, Mirza Malkom Khan being the only absent member at that time.)

The Delegates from Great Britain explain that they vote under reservation as to the application of this paragraph to India.

The 3rd and 4th portions of section 7, not eliciting any remarks worth recording, are unanimously adopted.

Dr. Goodeve tenders his cordial adhesion to the 5th section, which has just been read, and which *treats of those measures which are to be adopted against all importations from the Hedjaz, should the cholera*

manifest itself during the pilgrimage. The measures proposed by the Commission appear to Dr. Goodeve as wise as they are efficacious, and he does not think that they could have better decided a question so difficult of solution.

Dr. Salem Bey expresses his satisfaction that the Commission has admitted (at page 47) the possibility of modifications, which, without altering the fundamental principle of the measure proposed by it, may be considered necessary to facilitate its application. This determination of the Commission diminishes the force of the objections made by him (Dr. Salem Bey) regarding certain points in that portion of the Report.

The port of El-Wedge, which is suggested (page 4) as a place of quarantine for the pilgrims, is, in Dr. Salem Bey's opinion, unsuited to the purpose, especially if cholera were to break out at Mecca.

Dr. Mühlig does not consider that a delay of 10 full days after the disappearance of cholera amongst the pilgrims undergoing quarantine at El-Wedge, before giving them permission to proceed to Egypt (page 48), will be a sufficient guarantee. The Commission, which has fully considered this point, recommends, it is true, the previous disinfection of goods and luggage, and suggests besides that vessels which carry these pilgrims should be subjected to an inspection of 24 hours' duration at Tor; but will this disinfection be possible in actual practice? Dr. Mühlig, who has his doubts in this matter, and who does not admit the efficacy of the 24 hours' inspection, which will be applicable to all kinds of vessels, thinks that the captains of these vessels will always feel an inclination to conceal the real sanitary condition of their passengers, and would, under these circumstances, recommend that the pilgrims should not be allowed to quit El-Wedge until 15 days after the disappearance of cholera amongst them, as also that the maritime communications between the Hedjaz and Egypt be not re-established in less than 15 days instead of 10, as proposed, after the cessation of all signs of cholera in the Hedjaz; specially as 8 or 10 days after the conclusion of an epidemic, isolated cases have often occurred. Dr. Mühlig calls attention to the fact that arrivals which have been affected by cholera are not admitted to pratique in the ports of the United States of America before the expiry of 21 days after the manifestation of the last case of cholera.

The delay of 10 days proposed by the Commission is sufficient only with reference to caravans proceeding to Egypt, and this with regard to the length of the caravan journey.

M. Stenersen agrees in the opinions expressed by Dr. Mühlig, and remarks also that the Conference can take them into consideration without interfering with the decision that it will have finally to enunciate when the question as regards the duration of quarantine shall be discussed. When it is in contemplation to adopt sanitary measures in relation to importations from the Hedjaz, so momentous in reference to the importation of cholera into Europe, we must always reckon upon an application more or less defective, and, moreover, as there are no great

commercial interests at stake, the Conference can, according to M. Stenersen, be itself more strict without inconvenience.

M. Keun reserved his opinion in regard to what has been advanced on the subject of the permission to be accorded to pilgrims, whose destination is to countries beyond the Red Sea, to embark and return to their homes on condition that they should submit to the rules prescribed by the sanitary Authorities. The Commission having asked, in the first place (page 46), that the conditions of the English regulations may be observed previous to the departure of those pilgrims for the Hedjaz, M. Keun has reason to believe that his Government will be disposed to ask that this ruling be also applied when they re-embark in the ports of the Hedjaz to return to their own countries, and to suggest an agreement to this effect amongst the Powers interested.

His Excellency Salih Effendi disputes the statement that a portion of the pilgrims do not undertake (vide page 43) the journey to Medina. It would be more exact to say that they are "those who have been to Medina before going to Mecca, which is the case with the largest portion of those who return as quickly as they can to embark at Jeddah."

Dr. Fauvel replies that the Commission has had under its notice, reports wherein it has been mentioned that there are pilgrims that do not proceed to Medina. It may be, moreover, that the number is not considerable, and the Commission can only, in this respect, refer to what has been said by the Turkish Delegate.

Drs. Dickson and Bartoletti support the motion of Dr. Mühlig; they observe that the duration of 15 days' quarantine has already been adopted by the Conference, and also by the Board of Health for importations from the Hedjaz.

M. le Baron de Testa asks that Dr. Mühlig's motion may be the subject of a special vote on the part of the Conference.

Drs. Salem Bey and Gomez, on the contrary, think that 10 days' quarantine is quite sufficient. The latter observes that we must also take into consideration the duration of the voyage, which appears to him to be actually a continuation of the inspection. If during the voyage cases of cholera manifest themselves, precautions could always be adopted to prevent the importation of the malady into Egypt.

Dr. Mühlig objects that the crews of vessels which have conveyed pilgrims in quarantine at El-Wedge should not be submitted to choleraic influence, and that they will be exposed to infection. If the embarkation of these pilgrims shall have taken place prematurely, according to Dr. Mühlig, the result would be a further degree of danger in regard to Egypt; and this may be assigned as another argument in favor of a quarantine of 15 days' duration.

Dr. Fauvel declares that the majority of the Commission adheres to Dr. Mühlig's proposition.

Dr. Bykow individually is of opinion that 10 days will suffice, the rather, as it has been well urged by Dr. Gomez, that the length of the

voyage, 3 or 4 days, and the 24 hours' observation at Tor, which will altogether make up a period of 13 or 14 days, between the date of the disappearance of cholera amongst the pilgrims at El-Wedge, and that of their arrival in Egypt. Dr. Bykow, however, does not object to the quarantine being of 15 days 'duration and even more. The longer this quarantine lasts, the greater will be the safety of Egypt and Europe.

Dr. Mühlig's proposition for fixing 15 days' quarantine instead of 10 days is put to the vote and unanimously adopted, with the exception of Dr. Gomez, who voted against it (25 voting).

The text and conclusions of the 5th paragraph of Section 7 are then put to the vote, and unanimously agreed to. Drs. Goodeve and Dickson vote under the reservations above referred to by them.

Section 8 (*Clause A.*) *of Chapter III. is then read, in regard to "measures to be adopted in case cholera should manifest itself in Egypt."*

Dr. Mühlig thinks that the Report should not have discussed the question whether, in that case, it would not be advisable to interrupt for a short period the maritime communications between Egypt with the whole of the Mediterranean sea-ports, but that it should have at once answered the question in the affirmative. The interruption of communications from the time that the cholera shall have penetrated into Egypt is evidently the only measure which can be adopted to preserve Europe from the invasion.

Dr. Monlau is of the same opinion; the question is perfectly clear, and the decision of it must be fully announced, and if the Commission has thought it prudent to show itself timid, the Conference should take more decided and explicit action in the matter, and declare openly that, in a sanitary and perhaps in a commercial point of view, the necessity for interrupting the communication cannot for a moment be doubted.

The efficacy of prophylactic measures depends on their being well-timed and rigorously applied. Dr. Monlau would, however, even wish to go further still beyond that, and that without interfering with the absolute temporary interruption determined upon in the event of an epidemic being authoritatively reported, all importations from Egypt should in the ports of the Mediterranean be subjected to a quarantine of observation during the whole period of the pilgrimage to Mecca. Egypt might be looked upon in the light of a compromised or suspected country immediately on the arrival of the Indian pilgrims at Jeddah, and in this point of view the quarantine of observation becomes a strict sanitary duty. Dr. Monlau thinks that this quarantine would be a further security against the importation of cholera *viâ* the sea, and that besides, if periodical and habitual, it would not cause much inconvenience to navigation. When we are desirous of accomplishing great results, can we shun great measures? In Spain there exists an analogous quarantine against the yellow fever. All arrivals from the Antilles and the Gulf of Mexico from the 1st of May to the 30th Septem-

ber, (*i. e.*, during those months when the disease is most to be dreaded) are invariably subjected to a quarantine of seven days' duration, and for the forty years since this has been the established rule, it has afforded satisfactory results. The yellow fever, which formerly so often ravaged the coasts of Andalusia, has not since that time made its appearance. Dr. Monlau, after calling attention to the fact that this preventive quarantine had been employed most effectually against the plague, and that it was only within the last few years that unrestricted intercourse with the Levant has been permitted, asks in conclusion why quarantine should not also be adopted in regard to cholera, at least until the organisation of the sanitary service of the Red Sea. When Egypt affords, in a sanitary point of view, greater security than she now does, it will then be possible to dispense with precautionary measures, the necessity for which at present is evident.

Dr. Pelikan agrees with the Commission upon the principle of interruption of communications, only he is desirous of knowing what exceptions the report wishes to speak of when at the 50th page it says that the interruptions will not have reference to certain emergent communications, which, by the adoption of indispensible precautions, might be carried on without danger. If by this the mail steamers are meant, those measures would then lose all their efficacy, and he would be under the necessity of voting against them.

Dr. Fauvel replies that the Commission only alluded to mails, in fact to despatches. No exception will be made in favor of the mail steamers.

Dr. Goodeve votes against the conclusions of the Commission; he does not contest the efficacy of the measures proposed, but he denies that they are possible in practice, as also that they will meet with the approbation of those Governments who feel an interest in these measures. International and commercial interests might have been brought more in accord with the prescriptions of science, and the Commission would have done better if it had indicated practical measures of preservation, instead of deciding so summarily a question which interests the relations of one portion of the globe with the other. Dr. Goodeve is, however, happy to learn, from the formal explanations given to Dr. Pelikan, that the despatches and ordinary mail packages will be permitted to pass through Egypt, a point which had not been very clearly defined either in the report or in the conclusion, where only interruption of the maritime communications is mentioned, without which communications the transport of despatches cannot take place; but there still remain the numerous travellers from India, China, and Australia who traverse Egypt on their journey to Europe. Can it be intended that they may be obliged to delay in Egypt perhaps for the long period of three months? We could have had recourse to such means in former days when communications between different nations, it might be said, scarcely existed; but this is no longer possible in modern times, and if frequent intercourse renders the propagation of contagious diseases more easy, we should learn to accept the good as well as the evil.

Dr. Goodeve believes, in any case, that it would have been preferable if the discussion of this portion of the Report had been preceded by that portion of the Report of the Commission which treats of quarantine measures; perhaps that Commission will be able to point out precautionary measures which will prove equally efficacious but less onerous than those now under discussion.

As regards Dr. Monlau's proposition that the multitude of travellers from Egypt should each year regularly be subjected to observation in quarantine whilst the pilgrimage lasts, whether the cholera existed or not at the Hedjaz, Dr. Goodeve thinks that it would be a harsh as well as an unjustifiable measure, if we were to benefit by the experience acquired during the fifty years since cholera has been the subject of attention. He hopes that this proposition will not be adopted by the Conference.

Don Segovia admits that his opinions have undergone modification since the sitting of the Sanitary Conference of 1851, where he was in the position of a defender of commercial interests. We must, under any circumstances, prevent the transmission of diseases. Commerce, as its transactions are interrupted by the outbreak of an epidemic, has the greatest interest in the matter: it will gain rather than lose by protective measures. Though not, perhaps, as exacting as his colleague Dr. Monlau, he, Don Segovia, does not the less adhere to his proposition.

Dr. Mühlig believes that Dr. Goodeve exaggerates the evil consequences of the interruption of maritime communications between Egypt and the Mediterranean ports. Why will not commerce be able to resume temporarily, in case of an epidemic, the former route of the Cape of Good Hope, the only one which it followed not many years ago? Sanitary interests should prevail over commercial interests; if last year communications had been interrupted for a period of four or five weeks, we should not have seen cholera extending its ravages throughout the whole of Europe.

Dr. Goodeve, in answer to Dr. Mühlig, states that it would be impossible, either as regards India or Egypt, suddenly to direct a change of route for the three or four months during which the interdiction of communications may last. Besides, what advantage will the alternative offer to travellers who will have either to remain in Egypt, or be compelled to undertake a journey which it will take months to accomplish?

Dr. Maccas is aware that commerce will have to suffer greatly from the interruption of maritime communications; but he asks if that is really a question for a Conference whose first duty should be to devise safeguards for the public health. The first point to decide should be whether the measure proposed is efficacious or not; if it be efficacious, though perhaps also obstructive, and no other equally good can be suggested, the consideration that it would impede commercial relations should not be a sufficient reason for its rejection. Dr. Maccas,

without prejudice in other respects to the conclusions arrived at by the Commission appointed to consider quarantine measures, and differing from Dr. Goodeve in opinion, does not believe that they were sufficient to preserve Europe from the danger to which she is exposed by the presence of cholera in Egypt. Experience has shown that the efficacy of complex quarantine measures, which necessitate the co-operation of numerous agencies, depends on the mode of application, and the chances of infraction are too frequent to render those measures an infallible guarantee, especially if we take into consideration the impossibility of preventing the diffusion of cholera into Europe when once it has succeeded in penetrating into any portion of the European continent. Placing quarantines then out of the question, there is evidently no other means left than to interrupt the communications between Egypt and Europe. Under those conditions, Dr. Maccas does not simply bind himself to support the conclusions come to in the Report, but asks the Conference to reply in the affirmative, as has been suggested, to the question put by the Commission.

Dr. Goodeve states that he prefers the most rigorous quarantine to the interdiction of communications.

Dr. Bartoletti does not oppose the adoption of special measures in regard to Egypt, but they must be capable of practical application, specially as the Commission is the first to doubt the possibility of applying those measures which have been proposed by it. Dr. Bartoletti would have no objection to make to the interruption of communications if only emigrants and tourists were to be the sufferers; he thinks that we could, without any inconvenience resulting to the public health, permit the exportation of merchandise.

Don Segovia is not of the same opinion. The mails only should be exempted from these measures. Don Segovia adds that as the despatches from India are transported by means of well closed wooden boxes, made on an uniform plan, and which convey no susceptible matter, such as leather, or hemp, the precautions to be taken in regard to them, should an exception be made in their favor, would involve no danger.

Dr. Fauvel rises to explain the reasons which have guided the Commission in treating this question. The Commission has specially been mindful to bring forward the extreme importance of the measures recommended in the preceding chapters to prevent cholera from penetrating into Egypt, the interruption of communications being, in fact, the last expedient to which recourse need be had if the said measures are well applied. Should we at the present time draw back from adopting such a step, if unfortunately the cholera, overcoming every obstacle, were to invade Egypt? The Commission does not think so. In time of war we do not hesitate to place whole countries in a state of blockade, and to starve out and even bombard inoffensive towns, and all this is considered to be quite justifiable,—how then shall it be maintained that that which is permitted in this case, often for very trivial causes, should

be looked upon as unjustifiable when it is in contemplation to preserve humanity itself from a dreadful scourge? The Commission does not, in fact, think that the injury which may be caused to Egypt by the interruption of its relations with Europe for a period of two or three months will be as great as it is imagined by some persons.

Dr. Fauvel indicates one by one the consequences likely to result from the interruption of maritime communications, and he shows how much these consequences have been exaggerated, since this interruption will only apply to the conveyance of merchandise and travellers, and not to despatches, which are necessarily of the greatest importance. However serious the consequences indicated may be, whatever inconvenience may be the result, the Commission declines to admit that it can bear comparison with the great calamity which a choleraic epidemic causes in regard to commercial transactions, without speaking of the thousands of those whose death it has caused. Dr. Fauvel says, in conclusion, that if the Commission has framed its conclusion in an interrogative shape, it was not because it doubted what reply should be given to the question so put, but only because it found itself in the presence of certain obstacles which it was obliged to note, and preferred under those circumstances to pass a guarded opinion, leaving it to the Conference to pronounce its final decision.

Dr. Salem Bey stated that he would vote against the conclusion of the Report; not that he contested the right of Europe to have recourse to the most rigorous measures with a view to ward off any cholera invasion from Egypt, but because it appears impossible to him that this result could be attained by such impracticable means as those suggested by the Commission.

Dr. Salem Bey regrets that some Delegates should have thought it necessary to have gone even beyond the Commission, by asking the Conference to decide such an important question before the discussion of the Report of the 2nd Commission, which has demonstrated the impossibility of reckoning upon the application of rigorous quarantine measures, in order to arrive at the end in view.

Dr. Gomez asks if it would not be an act of injustice to impose on Egypt such an immense amount of responsibility with the sole object of watching over the public welfare of Europe.

Why not then also require the complete isolation of Italy, Spain or France, when the cholera shall have manifested itself there, and the neighbouring countries are still intact?

Dr. Gomez, who approves of the reservation with which the Commission recommends the isolation of Egypt during an epidemic, will vote in favor of the conclusions of the Report, but only in the shape in which they have been framed. M. Kalergi states that his Government reserves to itself the right of adopting such precautionary measures as it considers necessary in regard to those countries which should continue, contrary to the decision of the Conference, to hold communication with Egypt after a choleraic epidemic has broken out there.

Dr. Dickson admits that the interruption of communication with Egypt can in a theoretical point of view prove the safest means for preserving Europe, but he really doubts if it be possible in practice, on account of the opposition that this measure will meet with on all sides. Could we not, in order to conciliate all parties, select some island in the Mediterranean, where, on cholera appearing itself in Egypt, vessels coming from that country will have to perform quarantine before being permitted to prosecute their voyage towards Europe?

Dr. Fauvel remarks that this question is within the province of the Commission appointed to consider quarantine measures.

Dr. Bykow thinks that the Conference should be in a position to come to a decision after the explanations tendered by Dr. Fauvel. It devolved in fact on Egypt, to save itself from the losses it would suffer by the interruption of its communications, by a strict application in the Red Sea of the measures suggested by the Conference.

Don Segovia also suggests that the motion should be put to the vote, but asks that each Delegate should reply to the question of the Commission by saying either *yes* or *no*.

The President then put to the vote, in the shape of a question, the text of Section 8, as framed by the Commission.

The Conference adopted the proposition by a majority of 16 against 3, one member declining to vote.

The following members voted in favor of the above Section:—

Dr. Sotto, Don Segovia, Dr. Monlau, Comte de Lallemand, Dr. Fauvel, Kalergi, Dr. Maccas, Vernoni, Keun, Drs. Millingen and Gomez, Mühlig, Pelikan, Bykow, Stenersen, and Baron Hübsch.

Against—Drs. Goodeve, Dickson, and Salem Bey.

Abstention—His Excellency Salih Effendi.

His Excellency Salih Effendi afterwards enquires of the Conference if the question put by the Commission should be replied to in the affirmative; it was decided in the affirmative by a majority of 13 against 3, and 4 abstentions.

Those members who voted in favor were—

Dr. Sotto, Don Segovia, Dr. Monlau, Comte de Lallemand, Dr. Fauvel, Kalergi, Dr. Maccas, Vernoni, Drs. Mühlig, Pelikan and Bykow, Baron Hübsch, and M. Stenersen.

Against—Drs. Goodeve, Dickson, and Salem Bey.

Abstention—M. Keun, Drs. Millingen and Gomez, and His Excellency Salih Effendi.

The meeting separated at 4½ P. M.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 34, OF THE 6TH SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirty-fourth meeting on the 6th September 1866, at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d' Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Monseigneur Brunoni, Archbishop of Taron, Vicar-Apostolic at Constantinople.

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, India Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to H. B. M.'s Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of H. M. the King of the Hellenes.

Dr. G. A. Maccas, 1st Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, 1st Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp-General to H. M. the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Salubrity at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi, one of the Secretaries, read the minutes of the last meeting but one (No. 32). They were unanimously approved.

M. Maccas desired to make an urgent proposition.

The termination of the labors of the Conference, he said, was close at hand. To finish its task it only remained to it to enter upon the fourth group of its programme. He was of opinion that by immediately proceeding to the nomination of a Committee with the object of studying the question framed in that group, the Conference would gain some time, for it could receive the Report of the Committee immediately after the discussion of the Report of the second Committee.

The motion made by M. Maccas gave rise to a conversation between several Delegates, the object being to come to an understanding upon the following points :—

1*st.*—Was it necessary to appoint a special Committee, or should the Conference resolve itself into a Committee of the whole house, to consider and solve the question put in the fourth group thus—

"What definitive form should the Conference impart to the resolutions it may adopt?"

2*nd.*—In case a Committee should be appointed, should the Conference await its Report to discuss the meaning to be attached to the question framed in the fourth group of the programme, or would it be better to explain its definition at once, and trace out to the Committee the plan it should follow?

3*rd.*—Should it be the task of the Committee to draw up an official Act, a draft convention, or should it confine itself to framing a final minute, a resumé containing an analytical account of the labors of the Conference?

On the conclusion of a discussion in which MM. de Lallemand, Monlau, Stenersen, Kalergi, Keun, Segovia, Maccas, Fauvel, Goodeve, Bosi, de Soveral, Bykow, and Bartoletti, took part, it was unanimously resolved—

1*st.*—To immediately appoint a Committee of seven members, consisting of diplomatic and medical Delegates.

2*nd.*—To impose upon this Committee the task of framing an *enunciation* "of the principal proposition, and conclusions contained in the reports adopted by the Conference."

This enunciation to be preceded by a short introduction, and the minute relating to each proposition as well as each conclusion to be indicated.

3*rd.*—This enunciation not to contain any commentary, and to be signed by all the Delegates, by whom it is to be submitted for the consideration of their respective Governments.

On the proposition of His Excellency the President, the following Delegates were appointed members of the Committee :—

MM. de Lallemand, Segovia, de Noidans, Goodeve, Bartoletti, Fauvel, and Monlau.

The Conference proceeded to the order of the day, and the President asked M. Fauvel to continue the reading of the Report of the third Committee.

M. Fauvel read from page 51 to page 55.

Mirza Malkom Khan desired to offer some remarks, not upon the substance of the chapter, which he accepted and for which he would vote, but upon some facts which seemed to him to be exaggerated, and also upon some details which he considered to be difficult and even impossible of application.

The precautionary measures proposed by the Committee to render the custom of the conveyance of corpses inoffensive were excellent, and he entirely concurred in them, although, to his thinking, the Report had imparted exaggerated proportions to this transport. Mirza Malkom Khan observed that all corpses were not so transported: he knew this positively, having often seen the custom described in his travels.

Regarding the proposed institution of a sanitary system organised on the model of the one working at Constantinople, Mirza Malkom Khan was of opinion that the European element was not indispensable, and that the adoption of such an institution might meet with great difficulties in Persia. But these difficulties would not be encountered at all if they were to content themselves for the time with the indigenous medical element recruited from amongst those who had pursued their studies in Europe. In time, he added, it would perhaps be easy to introduce the foreign element.

At page 54, continued Mirza Malkom Khan, it was said:—"If Persia could with security entertain a sanitary physician at Herat, we would recommend her to do so." There was no doubt, in his opinion, that Persia could perfectly well maintain one, and she was perfectly certain to do so. So that he thought the doubt expressed in the passage was in no way justified, and it should, therefore, be suppressed.

In the same page it was said that the Persian Government would do well to come to an understanding with the Imam of Muscat for the organisation of a system capable of defending the country against the importation of cholera by sea. He proposed the suppression of this passage. He had shewn, he said, at other times, the reasons which he might allege in support of what he had just asked. As he did not intend to revert to them, he confined himself to saying that the Imam of Muscat was possessed of no autonomy, that he exercised no domination in the Persian Gulf, and that Persia could act independently of him, having no need of his concurrence.

M. Fauvel begged those who wished to speak on the subject of the Imam of Muscat or the Persian Gulf, and he had heard that some Delegates intended to do so, to be good enough to bring forward their remarks at once.

M. Millingen said that amongst the other claims the Committee of the Report had to the gratitude of the Conference, the chief was surely the modesty of its labors. This modesty was displayed in various places in the Report, and notably when the Committee acknowledged the insufficiency of the measures proposed by it.

M. Millingen thought that this reserve should be properly and deeply valued, and more should not be required of the Committee than it had been able to do with the most hearty good will. Thus there were excellent measures in the report, and also others which were incomplete or impossible of application. The great interest of the question, he remarked, touched upon the Persian Gulf. But since the Conference had deemed it expedient to make special mention of Persia, the Committee in its turn should have made a special study of the measures to be taken to preserve the coast of the Persian Gulf, and it should not have confined itself to recommending them to the solicitude of Persia, the Imam of Muscat, and the Turkish Government, thus adjourning indefinitely the solution of such an important question.

No country, continued M. Millingen, with the exception of India, had been more frequently and more cruelly ravaged by cholera than Persia and Mesopotamia. In fact, from 1821 to 1866, the frequency of the epidemics there had been such, that it began to be thought that the disease really existed there endemically. The Conference, after long enquiry, had acquired the certainty that this frequency was due, in the majority of cases, to an incessant renewal of the choleraic germ by means of arrivals from the ports of Kurrachee, Surat, and Bombay, and that the importation was effected through the Persian Gulf, especially by the numerous Mahomedan pilgrims who, leaving choleraic foci, constantly proceeded to the venerated places and sanctuaries of the Shiahs. Now, if the actual state of the Persian Gulf, continued M. Millingen, deserved to be taken into serious consideration, in connexion with Persia and Mesopotamia and the adjacent countries, the future reserved to it interested Europe too much not to occupy the minds of people in anticipation. A Committee already provided with authority from the Ottoman Government had undertaken to connect the Mediterranean with the Persian Gulf by a railway, which, passing through Syria and following the course of the valley of the Euphrates, was to terminate at Bassora, whence passengers and goods were to be transported by steamers to the port of Bombay. This new route would shorten the distance between England and India by a thousand miles, and the journey would be accomplished in half the time taken by the Egypt route, *i. e.*, about eighteen days. When, added M. Millingen, the Suez Canal was finished, the Euphrates valley route would enjoy a superiority in comparison with the Isthmus route similar to that obtained by the latter in comparison with Vasco de Gama's route *vid* the Cape of Good Hope.

Following up these observations, M. Millingen would ask whether it would not be more convenient to set up at the very entrance of the Persian Gulf, on the Islands of Kishm or Ormous, for instance, by which every ship entering the Gulf must pass a sanitary establishment, where all ships entering this sea should be subjected to search, and, if necessary, to measures of quarantine? If so, what character ought to be imparted to this establishment, and in what cases, by whom, and how should these measures be applied?

M. Millingen begged the honorable Conference to be so good as to take into its serious consideration the idea he spoke of, and which he submitted in the shape of a motion.

With regard to the Imam of Muscat, M. Millingen believed that his intervention would be indispensable; and as he alone possessed almost the key of the Persian Gulf, the previous mutual consent and concurrence of the Imam and the Persian Government were necessary for the establishment of a Sanitary Department on the coast of the Gulf.

M. Gomez desired to make some remarks and propositions on the same subject. The study made in the Conference of the march of cholera and of the means which facilitated its propagation, made it abundantly clear that great deserts, long journeys by mountainous and difficult roads, and long sea voyages, might oppose a barrier to the invading march of the disease, if these conditions of the route were not counterbalanced by other circumstances capable of annulling their effects, and permit of cholera surmounting these obstacles in spite of everything. Such obstacles as these would have more frequently arrested cholera in its march across the Continent of Asia, and also by sea, and prevented its arrival in Europe, if the scourge had not frequently found, in caravans, in the pilgrimage particularly, and in the effects of the great assemblages resulting therefrom, the means of concentrating the choleraic germ, of confining it, of maintaining it so long that time and space could not dissipate it before it was carried into the distant regions to which these assemblages proceeded. Hence, continued M. Gomez, the necessity of watching them, of following them in their travels, of exercising the strictest sanitary police over them. The report under discussion showed all the importance of this, and it proposed a system of measures which had been appreciated. In this system the Red Sea invited very special attention, the first cause of this being the pilgrimage to Mecca. Regarding some of the measures projected to prevent the entrance of the disease, the only difficulty that existed was that of execution. But the Persian Gulf, M. Gomez thought, none the less deserved to be the subject of anxious and foreseeing care: indeed, it required more, as it was closer to India and in more continuous connexion with Indian ports, and because it was the chief and the easiest entrance for the disease into Persia. Moreover, it was, as had been demonstrated, the most exposed point, being one of the first stages through which cholera most frequently passed on its way from India to Europe.

Why not, then, asked M. Gomez, organise for this sea, especially at the entrance of the Gulf, a system of measures similar to that proposed for the Red Sea? Instead of an almost uninhabitable rock, like the island of Perim, there would be a choice between the island of Ormous and the islands of Kishm and Larej, where there is no want of resources, and where not only posts of observation but also great lazarettos might be established. In doing this, instead of having to deal with barbarous tribes, with whom for the present there would be no hope of maintaining pacific relations, (like those who people the coasts of Yemen and Abyssinia), they would have to deal with the Persian Government and

the Imam of Muscat, with whom there was every probability of coming to a good understanding. There was not, it is true, much to be said about these countries in respect of salubrity, but the corresponding countries of the Arabian coasts were not much better.

What had been made known by the march of cholera, continued M. Gomez, and what had been learnt of the means of preservation to be opposed to it, shewed that it was at the entrance of the two gulfs especially that it was necessary to oppose it, and this might be done by means of posts of observation and lazarettos properly established. This end could be attained, according to M. Gomez, by a regular watch being kept up by cruisers at the mouth of each gulf, if only at the time of the pilgrimage. He was of opinion that the maritime powers would easily come to an understanding with the view of organising such a cruising system: they had done a similar thing, at a much greater expense than this would amount to, in the suppression of the slave trade. Did cholera, spread by crowded ships, maintained by greedy speculation for which there was no excuse, deserve less attention from them? It would not be the least service rendered by the Conference if it were to indicate the causes of the propagation of cholera, looked in this point of view, and to invite the attention of Governments to the effectual means in their power to oppose a barrier to such propagation.

M. Gomez proposed therefore:

1*st*.—That a Sanitary Department, like that proposed in the Report for the Arabian Gulf, be established in the Persian Gulf, special attention being paid to the entrance of each gulf.

2*nd*.—That this Sanitary Department should be aided in both gulfs at the period of the pilgrimage by cruisers which should regularly watch over the execution of the sanitary police regulations on board ships, and also over everything in connexion with the measures of preservation against cholera in both seas.

These two propositions, said M. Gomez, one of which was identical with that of M. Millingen, had already been submitted by him to the Committee.

Mirza Malkom Khan would merely observe to M. Millingen that his speech, the chief object of which was the establishment of a special Sanitary Department at the entrance of the Persian Gulf, was at the least superfluous, considering that the Persian Delegates had already promised in the name of their Government that it should be established.

M. Sawas believed that M. Millingen's proposition might be useful as a precautionary measure, if, however, it were admitted by the Government to which the territory belonged. He remarked, however, that M. Millingen assumed a knowledge of the islands of Kishm and Ormous which did not exist. It was necessary, therefore, before anything else, to study the subject. He did not share M. Millingen's opinion that every ship must pass by these islands. That not being so, it was necessary to compel them, by armed force, to do so in order to subject them to inspection. The Persian Delegates, said M. Sawas, offered no opposition

to the adoption of efficacious measures in the Persian Gulf, but they were of opinion that nobody was in a position to decide so clearly and distinctly with regard to the Persian Gulf as had been done with respect to the Arabian Gulf. Further study and consideration were necessary, and so long as these were not undertaken, the proposals of M. Millingen and M. Gomez could not be taken in hand, still less discussed properly with a knowledge of the subject.

M. Millingen thought the Persian Delegates had not understood his proposition. He had asked whether it was not possible to find a place in the Persian Gulf suited to the establishment of a Sanitary Department. Such a place, in his opinion, did exist, and he had mentioned it. The information of which M. Sawas, according to his own showing, stood in need, was possessed by many other persons. The place mentioned by him was perfectly well known, thanks to the knowledge obtained from the geographical charts made by the English after their expedition against the pirates.

M. Gomez also maintained that the islands he had mentioned were perfectly well known, and he was able to give a physical and geographical description of them. It was, he could assure them, a well-known country, formerly the resort of pirates, a few of whom even at the present day made it their refuge. Ships could be watched as easily at the entrance of the Persian Gulf as at the entrance of the Red Sea, and indeed more advantageously, on account of the islands scattered about in the Gulf, which were quite habitable for Arabs. These islands, which now belonged to the Imam of Muscat, were formerly possessed by other masters. There was one of them which was not exactly at the entrance of the Persian Gulf, which still possessed the remains of an ancient castle built by the Portuguese, when their dominion extended as far as the Persian Gulf. By establishing sanitary posts in some of these islands, which were quite suited to the purpose, cholera might be seized and restrained at a point where it was very easy to get hold of it, particularly if the place were made a cruising ground. The working of the cruisers would be much easier than similar work which necessarily extended over a great space, like that, for instance, the object of which was suppression of the traffic in Negroes on both coasts of Africa, the Eastern and the Western.

Dr. Goodeve thought that the Committee had clearly indicated what, in principle, ought to be the nature of the Sanitary Department which it was expedient to establish in the Persian Gulf. It was in this Gulf, he himself thought, that the greatest danger existed, and this danger was more serious than in the Red Sea, on both coasts of which there was but little cholera.

It would, perhaps, said Dr. Goodeve, be easier to become possessed of guarantees by the sea route, but he must admit that that could not be done so effectually as the Committee supposed. When cholera enters by sea and by land, as had happened in the Persian Gulf, maritime precautionary measures could be neither as sufficient nor as efficient as was to be desired. Cholera entered the Persian Gulf by land from

the south and the north. It would be indispensable, therefore, to succeed in the establishment of an efficient barrier to adopt measures by land and by sea. This circumstance, Dr. Goodeve pointed out, completely changed the conditions of both Gulfs, which bore no resemblance to each other.

M. Fauvel confessed that he could not share in the confidence of M. Millingen or in the enthusiasm of Dr. Gomez with regard to the Sanitary Department they proposed to establish at the entrance of the Persian Gulf. It was not, in his opinion, so easy as they thought to stop cholera there, and it was this difficulty which had decided the Committee, by whom the matter had been thought of, to set aside any project of this kind. Dr. Goodeve had very well said that cholera might be brought by ships into the Persian Gulf, but that it entered it more easily and more frequently by proceeding from coast to coast and port to port as far as Bender Abbas. On these coasts, said M. Fauvel, cholera existed almost permanently, and its importation was possible along the whole extent of the coast as well as by land. Speaking theoretically, continued M. Fauvel, nobody disputed the utility of a sanitary establishment at the entrance of the Persian Gulf; but it was necessary to have the means of putting the project into execution, otherwise the idea would be perfectly Utopian. Did these means exist? He thought not. They were justified in expecting that M. Millingen would have made them known and proposed them; but instead of indicating the means of execution, M. Millingen referred to the geographical chart, and instead of details, he referred to the influence of the Imam of Muscat, with whom he suggested that an understanding should be come to, or the project would fall through. It was necessary then to obtain either his consent, or to dispossess him of the place. Grave difficulties these, remarked M. Fauvel, which the Committee did not consider it expedient to enter upon.

M. Millingen replied that the influence of the Imam in the Persian Gulf was great, that this influence was owing chiefly to the fact that the Imam had been an ally of England since the time when he had joined the English in the expedition against the pirates. Thousands of ships carried the flag of the Imam, and the trade of these ships between these islands and India was very continuous and very lucrative. The trade also gave great influence to the English, who maintained two resident agents in these parts, one at Muscat and the other at Bender Abbas. It would be easy, therefore, by employing the influence of the English Government, to obtain the concurrence of the Imam. M. Millingen said in conclusion that if his proposition were accepted, he engaged himself to afford all the information that it would be required.

M. Sawas was of opinion that M. Millengen would do better to withdraw his proposition rather than return to the charge in maintaining things not proven. What he brought forward with regard to the Imam and Great Britain was of a nature to bind him to do rather

more than he had a right to do. M. Sawas thought the question reduced itself simply to this: Was the proposition of M. Millingen and M. Gomez useful; and was it, at the same time, possible to apply it? The French and British Delegates, said M. Sawas, had abundantly demonstrated that the proposition was neither useful nor possible. The Conference, therefore, he thought, must have understood the emptiness of the promises made by M. Millingen. Another question subordinate to the first was that of territorial possession. To whom did the island of Kishm belong? Persia maintained that she had a right to it, and her claims were much better founded than any that any other Powers, Portugal for instance, could urge.

M. de Soveral remarked that the right of Persia to the island of Kishm was very doubtful, while the claims which might be urged by the Portuguese Government for the possession of the island of Ormous were founded on a long domination, a domination which was attested by the castle still existing which the Portuguese had erected.

M. Sawas desired to make a remark touching the advice given to the Persian Government in the matter of the exhumation and transport of corpses.

In page 54 of the Report, in the last line but one, it was said that the Persian Government ought not to permit the exhumation and transport of corpses except during the three winter months.

M. Sawas declared that such a measure would give rise to great difficulties, which the Persian Government would perhaps be unable to overcome. It must not be forgotten, said M. Sawas, that the three winter months in Persia were excessively cold. He said in conclusion that the Persian Government being ready to accept and adopt all measures calculated to oppose the propagation of cholera across Persian territory, it was expedient to advise and recommend to it practicable measures, and not to exact impossibilities from it.

M. Bartoletti, after expressing his concurrence with the Report, reminded the Conference that the principal period for the transport of corpses was in the month of Mohurrum, which fell sometimes in summer and sometimes in winter, so that the advice given would be difficult and almost impossible to follow. There was another point in connexion with the transport of corpses, which, he thought, deserved the attention of the Conference. The Report might complete the guarantees it exacted by adding, in the interest of Persia, certain other precautions or formalities in the transport of corpses on the frontier in the direction of the Ottoman territory.

M. Fauvel, in reply to M. Sawas, said that the Committee had had no intention of imposing measures upon the Persian Government which it could not put into execution. The Persian Government was free to apply them or not. The Committee had confined itself to recommending them in the interest of Persia as much as in that of populations.

At the request of several Delegates, His Excellency the President put the 9th article to the vote.

It was adopted unanimously. Mirza Malkom Khan and M. Sawas voted under reserve as before.

The meeting terminated at 4-30 P. M.

Order of the day for the next meeting.—Continuation of the discussion of the Report.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 35, OF THE 8TH SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirty-fifth meeting at Galata-Serai, on the 8th September 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d' Affaires.

Dr. Monlau, Member of the Superior Spanish Council of Health.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy :

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands :

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomèz, Chief Physician to His Most Faithful Majesty.

For Prussia :

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia :

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Medical-Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway :

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

For Turkey :

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting opened at noon.

The order of the day being the continuation of the discussion on the report of the 3rd Committee, section 10 of that Report, *Measures to be taken on the Turco-Persian frontier*, was read.

Dr. Sawas commenced by acknowledging the good organisation of the Ottoman Sanitary Department on the Turco-Persian frontier: this organisation, which was due to one of the members of the Conference, Dr. Bartoletti, being however now some years old, it was possible that it might have in some parts become defective. Leaving aside, however, the efficacy of this system, the manner in which it was carried out at certain places must be vexatious to the Persians. The number of lazarettos was notably insufficient; and, where there were lazarettos, they did not always meet the exigencies of the Department any more than they did the necessities of the public safety. In these circumstances, and without at present entering more into detail, Dr. Sawas proposed that the Conference should express the wish that an International Commission should be appointed and deputed to the spot, to consider locally the measures to be taken in the interest of the preservation of both countries, and also to give advice as to the means of rendering the quarantine possible for the subjects of both countries. Dr. Sawas believed that there was all the more justification for this proposition, that the interruption of communications on this side could not be thought of,—a measure of which the possibility was admitted by the Committee, and which it thought might, in certain cases, be temporarily resorted to.

Dr. Bartoletti remarked, that the Sanitary Department of the Turco-Persian frontier had not been specially organised in view to cholera: at that time land quarantines were not thought of as a means of preservation, and in this point of view it might perhaps be necessary to complete them. The sanitary offices having been placed on the highways that had necessarily to be followed by the caravans on account of the configuration of the country, it would be sufficient to reinforce the surveillance at certain points, and it might perhaps be necessary to establish additional posts, but there was no reason whatever to appoint an International Commission to reconsider a question with regard to which the Ottoman administration possessed all necessary information. If the utility of quarantines on land frontiers was admitted by the Conference, it would rest with the Imperial Government to complete and bring to perfection a department which it had voluntarily established, and which, such as it was, had rendered incontestable service.

His Excellency Salih Effendi spoke to the same effect.

Dr. Sawas said, he would be sorry if the Turkish Delegates could suppose that he meant to attack the Ottoman Sanitary Department.

Whenever he had had any complaints to urge, he had not addressed himself to the Conference, but to the Superior Board of Health at which he had the honor to sit as Persian Delegate, and which alone was competent. If he had refrained from entering into detail, it was just because he had wished to avoid any misunderstanding of his meaning.

Dr. Bykow thought the appointment of an International Commission superfluous; it would devolve upon the Imperial Government to appoint a Special Commission, if necessary, to supplement the data already available upon the question.

Dr. Gomez thought that the adoption of M. Sawas' proposal would, no matter what they might do, be equivalent to a sort of censure upon the Superior Board of Health. The duty of the Conference was merely to lay down rules; it had nothing whatever to do with their execution: at the most it could express the wish that the Superior Board of Health would, without delay, take the necessary measures to complete the existing Department.

M. Fauvel supported M. Bartoletti's remarks. Everybody was agreed that the Department stood in need of improvement, and that there were omissions to be rectified; but the Board of Health possessed all the information it needed to do this.

The majority of the Conference appearing to concur in this view, Dr. Sawas said he would not press his motion. The Persian Delegate, however, remained convinced and maintained that an International Commission alone could bring to a desirable termination the enquiries yet required by the question, so important in the point of view of the preservation of Europe, of the measures of precaution to be adopted on the Turco-Persian frontier. Dr. Sawas expressly requested that this should be entered in the minutes.

Dr. Millingen reverted to the proposition he had made at the last meeting, relative to the insufficiency of the measures intended to prevent the importation of cholera by way of the Persian Gulf. It could not be denied that the Persian Gulf was one of the routes most commonly followed by cholera, and yet no serious precautionary measure had been adopted in that direction. After having reminded the Conference that no physician would consent to live at Bussorah on account of the climate, and after asking whether the surveillance exercised at Faô, which place was almost deserted, where there was no port, and by which a ship scarcely ever passed, could any longer be depended upon, Dr. Millingen declared that he considered it his duty again to call the attention of the Conference to this serious question.

M. Bartoletti replied, in regard to Faô, that that place was in an excellent situation for the surveillance of arrivals from the Persian Gulf, and that for this reason a custom-house even had been established there. Dr. Bartoletti announced that the Ottoman Government proposed to send a medical officer to Faô to complete the surveillance at that place.

Dr. Millingen maintained that his assertions regarding Faô were correct: he had received his information from an employé at the telegraph station at that place. Faô was situated at the extremity of a sandy plain: there were no habitations beyond the telegraph station and a few huts; and, finally, whatever Dr. Bartoletti might say, ships were scarcely ever seen to pass that way.

Dr. Gomez concurred with Dr. Millingen in asking that his proposition should be put to the vote. Not to mention the long discussions to which the almost continual presence of cholera in Persia had given rise, and the question whether the disease was endemic there or not, the chapter of Dr. Fauvel's Report, which had just been read, only showed more clearly the necessity of a rigorous surveillance. It had been objected that it would be difficult to exercise this surveillance at the entrance of the Persian Gulf, but would not the difficulty be still greater at the bottom of the Gulf; and, besides, could the surveillance there be so efficacious?

Dr. Fauvel did not think that it was necessary to revert to a question that had been so lengthily discussed; it would be equally superfluous to reproduce the arguments which at the last meeting had been opposed to Dr. Millingen's proposition. This proposition was not based upon any positive data; and, moreover, as had been rightly said, supposing even that it was theoretically possible to establish a Sanitary Department at the entrance of the Pesian Gulf, was it certain that the object proposed would be attained? Was it certain that cholera would not pass, in spite of the surveillance, following the coast by land? The Committee, which possessed no data of any kind regarding the localities situated at the entrance of the Persian Gulf, had stated the difficulty of defence on this side against the invasions of cholera. Only rather than risk itself on unknown ground, it thought that it would, on the contrary, be preferable to carry back the line of defence, protecting Bagdad on the southern coast by sanitary posts resting upon the barrier formed by the Tigris and the Euphrates. There, at any rate, a government existed which might be addressed, and the concurrence of which might confidently be depended upon.

Drs. Millingen and Gomez replied that their proposition was, so to say, copied from that of the Committee regarding the formation of a sanitary establishment at the entrance of the Red Sea. The difficulties which would be encountered by such an establishment at first setting up would not be more insurmountable at the entrance of the Persian Gulf than at the entrance of the Red Sea. In any case, and without entering into detail, which would be done by-and-by, the Conference might with propriety give its opinion upon the question of convenience.

M. Vernoni made the following proposal:—"The Conference is of opinion that it would be useful to appoint a Commission composed of Ottoman and Persian Delegates, and Delegates from the Imam of Muscat, to consider and decide as to the establishment of a sanitary service at the entrance of the Persian Gulf and on the coast of the Gulf."

Professor Bosi seconded the proposition.

Dr. Mühlig, on the other hand, proposed that the question, which seemed to him to deserve the most serious attention of the Conference, should be returned to the Committee, to which Dr. Millingen should be added.

Dr. Mühlig's proposal was put to the vote and rejected; there were 21 votes; three ayes (Drs. Millingen, Gomez and Mühlig), and 18 noes.

M. Vernoni's proposition was also rejected by 14 votes against five—two abstentions.

The Conference then proceeded to decide upon the 10th section of the Report. It was adopted: *Ayes.*—Dr. Sotto, Dr. Monlau, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Gomez, Dr. Dickson, Dr. Maccas, M. Vernoni, Professor Bosi, Dr. Mühlig, Dr. Bykow, Baron Hübsch, His Excellency Salih Effendi, and Dr. Bartoletti. No votes against. Six abstentions:—MM. Keun, Millingen, Mirza Malkom Khan, Sawas, Gomez, Stenersen.

After this vote, section 11 was read: '*Measures to be taken against the importation of cholera viâ Bokharia and the steppes of Tartary.*

Dr. Bykow made some amendments and additions to the information he had furnished to Dr. Fauvel:

1*st*, (page 60, 2nd paragraph). The number of versts (400) that the caravan had to pass over in traversing the sandy wastes of Kara-Kouhm must be exaggerated. According to an itinerary published by a distinguished statistician, M. Beloustine, which was based upon documents worthy of credit, the distance was not more than 160 versts, 54 of which were unprovided with water.

2*nd*, (page 60, last paragraph). When mention was made of the *desert wastes* that the Bokhara caravans had to traverse before reaching the Ser-Daria, they should be mentioned as *desert and hilly wastes.*

3*rd*, (page 62). Three or four caravans from Khiva, three of which are bound to Oremburg, and one to Mangaschlyk, whence goods are carried to Astrakhan by the Caspian Sea, annually traversed the steppes extending between the Caspian Sea and Lake Aral, passing by the western coasts of this lake. The Oremburg caravans were larger than those for Mangaschlyk, amounting to 2,000 camels. The first caravan from Khiva to Oremburg which took this route did so in 1738, in the reign of the Empress Elizabeth. The journey was made during the winter months, and lasted for 50 or 55 days, the distance being 1,360 versts. The caravans preferred passing by Lake Aral on the west, because there is less snow there than on the other side, and at the same time there is more pasturage and abundance of water.

Dr. Bykow thought he should supplement the details given in the report regarding the Kirghiz hordes, by mentioning a pilgrimage held in great respect by such of these hordes as were subject to Khiva. The object of the pilgrimage was the tomb of a greatly venerated saint (Tok-mak-ata), who was esteemed one of the protectors of the town of

Khiva and of the river Oxus. The Khivan Kirghiz visited this tomb every year in great numbers, the tomb being situated in an island in Lake Aral close to the southern coast; the Khan himself never failed to go there, accompanied by his court. The pilgrimage commenced in August, and lasted for several weeks.

Section 11 was put to the vote, and adopted unanimously (17 votes).

Section 12 was then read. *Measures to be adopted on the Russo-Persian frontier.*

Dr. Bykow pointed out an error in the 1st paragraph of page 63 (last line but one): *Chekka* was the word, not Cherka.

Dr. Pelikan thanked the Committee for its confidence in the Russian Government, with respect to the organisation of the Sanitary Department on its Asiatic frontiers. The Conference might safely depend upon the active coöperation of the Imperial Government in the measures of precaution it would recommend.

Section 12 was unanimously adopted (19 votes).

The summing-up, which was then read, was put to the vote, and unanimously adopted, with one exception, Dr. Monlau, who declined to vote, thinking it useless to do so after having adopted every portion of the Report in succession.

Dr. Maccas did not doubt that the Report, which had just been discussed, and which it seemed to him contained in itself almost the entire solution of the problem submitted to the investigation of the Conference, would meet with the approbation of men who closely and deeply studied these serious questions, as also that of all the Governments represented in the Conference. He (Dr. Maccas) thought he interpreted the sentiments of his colleagues when he proposed a vote of thanks to the Committee, to which they were indebted for this work, which would not fail to do the greatest honor to the Conference, and more especially to its reporter, Dr. Fauvel.

The Conference unanimously and warmly concurred in the congratulations offered by His Excellency Salih Effendi to Dr. Fauvel and all the members of the Committee.

The Conference then adjourned to Thursday, the 13th of September, for the commencement of the discussion on the Report of the Committee appointed to examine the proposed plan of reform of the Ottoman sanitary tariff.

The meeting terminated at 4 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE, DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 36, OF THE 13TH SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirty-sixth meeting at noon of the 13th September 1866, in the ordinary place of meeting, at Galata-Serai.

PRESENT:

For Austria:

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain:

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, 1st Physician to the King, Professor of Clinical Medicine in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Prussian Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Medical-Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Majesty's Legation.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Professor of Clinical and Pathological Medicine in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The Secretaries read the minutes of the three last meetings, (Nos. 33, 34, and 35), which were unanimously adopted.

M. de Lallemand, in the name of the Committee appointed to consider the question of the reform of the Turkish sanitary tariff, of which he was the reporter, handed in a report (annexure to minute No. 36) bearing the title

REPORT ON THE PROPOSED REFORM OF THE SANITARY DUES IN THE OTTOMAN PORTS,

drawn up by a Committee composed of Chevalier Pinto de Soveral, President; Baron Testa, M. Stenersen, Count de Lallemand, Diplomatists; and MM. Bartoletti, Sawas, and Spadaro, Physicians.

M. de Lallemand expressed his regret at not having been able to circulate the Report in question a little before the meeting. In order that the honorable Conference, which had expressed a desire to have the Report that day, might not have to wait longer, it had to be printed without its conclusions. These conclusions, however, evidently resulted from the text, and he would read them in their proper places as he proceeded with the reading of the text, if the Conference should decide upon entering on its discussion immediately.

H. E. the President consulted the honorable Conference upon this subject.

M. Vernoni said that the instructions received by the Italian Delegates, and which had prevented them from taking part in the vote when the majority of the Conference had decided upon appointing a Committee to consider the proposed reform of the tariff, not having since then been modified by his Government, he and his colleagues would refrain from taking part either in the discussion on the Report of the said Committee, or in the division which might ensue.

M. Gomez pointed out the necessity of adjourning the discussion in order to give time to the Delegates to study the Report. A simple reading of it during the meeting was not, in his opinion, sufficient to enable them to decide upon it with a proper knowledge of what it really was. That at least was his idea. M. Gomez wished to take part in the discussion and the vote, but after a previous study of the Report, and if the Conference would not agree to the adjournment he required, he would be compelled to decline taking part in both. His abstention was made all the more necessary that his colleague, Chevalier Pinto de Soveral, was not present at the meeting. It was probable that he was not aware that they were about to discuss the Report at once. He thought that if his colleague had known it, he would not have failed to be present at the discussion of the Report of a Committee of which he had been a member, and over which he had indeed presided. M. Gomez declared, in conclusion, that he did not mean in any way to interrupt the discussion.

M. de Lallemand reminded the Conference that as he had not been sure himself that the Report could be printed and distributed some days previous to this meeting, and foreseeing that objections like those of M. Gomez would be made, he had asked for the postponement of the discussion of the Report which had just been given in by him. But, notwithstanding his remarks, the Conference, with a view to save time, had insisted on bringing the Report upon the order of the day for the present meeting. This had been done, and the result was that the discussion must be proceeded with at once. It had not been possible, it was true, to circulate it a day previous to the meeting; but this delay, M. de Lallemand thought, could in no way justify the request made for the postponement of the discussion. The subject was one with which they had long been acquainted, and not only had it been discussed in the body of the Conference, but care had been taken to throw light upon the subject by reproducing *in extenso*, upon the same

subject (*see* minute No. 10) the report of the Superior Council of Health. A previous consideration of the report was, therefore, he concluded, not necessary, and a reading of it would suffice to enable the Conference to proceed immediately to its discussion.

M. de Lallemand added that he regretted the absence of Chevalier Pinto de Soveral, but it was not the case that he did not know that they were about to discuss it at once: he had even promised to be present.

M. Fauvel expressed himself to the same purport, and he added that it would be enough to glance over the report to be convinced that the question treated of was very simple, it being merely a question of morality and principle. The Committee had deliberately avoided all matters of detail, and had only laid down generalities. He was of opinion that no plausible reason existed for the postponement of the discussion.

A conversation ensued between MM. Stenersen, Maccas, Goodeve, Testa, Gomez, and Monlau, on one side; and MM. de Lallemand, Fauvel, Sawas, Bartoletti, Hübsch, and Salem Bey, on the other.

The first named desired an adjournment, the others wished that the discussion should take place at once.

M. Stenersen recommended that every member should be allowed full liberty of action. In the interest of the discussion, he said, it was necessary that every body should be free to judge whether he would or would not discuss the report.

M. Maccas begged that M. de Lallemand would, in the event of the Conference deciding upon a postponement, keep the discussion of the report for an extraordinary meeting, the meeting of Saturday being intended for the report of the second Committee.

Dr. Goodeve and M. Monlau seconded the proposition.

M. Sawas concurred with those who had asked for a postponement, but he did not think it would be necessary to have an extraordinary meeting. It would be necessary merely to meet earlier than usual next Saturday for the discussion of M. de Lallemand's report. The report not being of a nature likely to cause much discussion, they might immediately afterwards proceed to the discussion of M. Bartoletti's report.

M Bartoletti, Baron Testa, Baron Hübsch, and Dr. Salem Bey supported the motion made by M. Sawas.

At the request of several Delegates, His Excellency the President put this motion to the vote, *viz.*, a postponement to Saturday next.

It was accepted by a majority of seven votes against four, and one abstention, *viz.*, M. de Lallemand.

For:—MM. Salih Effendi, Bartoletti, Stenersen, Testa, Gomez, Sawas, de Noidans.

Against:—MM. Mühlig, Fauvel, Spadaro, Monlau.

The British Delegates declared that they had not taken part either in the discussion or the vote.

M. Maccas said that he had no instructions whatever, and he did not consider himself authorised to pronounce one way or the other. He was compelled to be altogether silent.

Several Delegates requested that the report should be read, so that they might proceed with the discussion at once at the next meeting.

After having consulted the Conference, His Excellency the President called upon Count de Lallemand to read his report.

The reading having been finished, Count de Lallemand read the formal conclusions, which, there being no time to spare, had not been printed at the end of the text.

These conclusions were as follows:—

CONCLUSIONS.

Consequently, gentlemen, from the considerations urged in the report joined to those which we reserve to bring forward during the discussion, if necessary, your Committee is of opinion:

1*st*.—That the Ottoman Government possesses an incontestible right to levy, with the consent of the Powers, a tax upon maritime commerce, which should reimburse the expenses of the Sanitary Department, amounting to the very moderate sum of four millions and a half of piastres.

2*nd*.—That the valuations which have been adopted as a base on which to fix the duty of 26 paras per ton, are correct.

3*rd*.—That this duty of 26 paras per ton is the most moderate of any paid in the ports of the various States for the Sanitary Department.

4*th*.—That the revision of the tariff after three years' trial as proposed in the project of the Council of Health, is a further guarantee against any error injurious to commerce.

5*th*.—That the administration of the revenues of the Sanitary Department by the Superior Council of Health, under the approbation and control of the Government, as defined in the report of the Committee of the Council, dated the 18th February 1865, is desirable, useful to the Department, and profitable to the authority of the Council.

6*th*.—With regard to the questions touching the assessment of the duty on ships and the various kinds of shipping, the Committee thinks it ought to confine itself to the observations contained in the report, and make no further remark.

The meeting terminated at 3 P. M.

Order of the day for the next meeting :—1*st*.—Discussion of the report of the Tariff Committee (Lallemand, Reporter.)

2*nd*.—Reading and discussion of the report of the second Commission (Bartoletti, Reporter.)

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 37, OF THE 15TH SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirty-seventh meeting, at Galata-Serai, on the 15th September 1866.

PRESENT :

For Austria :

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty the Emperor of Austria.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium :

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain :

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.
Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States :

Dr. Ignace Spadaro.

For France :

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

For Great Britain :

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

For Prussia:

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Chief Physician of the Hospital of the Ottoman Marine.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to his Legation.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

The minutes of the 36th meeting were read by Dr. Naranzi, and adopted.

A discussion was opened upon the conclusions of the report regarding the proposed reform of the tariff of sanitary dues in the Ottoman ports.

The adoption of the first of these conclusions gave rise to no observations.

For:—M. Segovia, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, M. Kalergi (under reserve,) Dr. Sawas, Chevalier Pinto de Soveral, Dr. Gomez, Baron Testa, Dr. Mühlig, M. Stenersen, Dr. Baron Hübsch, His Excellency Salih Effendi, and Dr. Bartoletti (14 votes.)

Eight abstensions:—Dr. Goodeve, Dr. Dickson, Dr. Maccas, M. Vernoni, Professor Bosi, M. Keun, Dr. Millingen, and Dr. Bykow.

Dr. Maccas said he was neither for nor against in the matter of reform, but having received no instructions to take up the subject, he did not think he could take part either in the discussion or the division.

The Russian Delegates made the same declaration.

M. Vernoni said that it was not the intention of the Italian Delegates in any way to oppose or deny the incontestible right of the Ottoman Government to levy a tax to cover the expenses of the Sanitary Department upon maritime commerce with the consent of the Powers; but that the royal Government, considering that the question of the examination of the sanitary tariff of the Ottoman Empire was not comprised in the programme of the Conference, and that it was not in any manner within its province, had for these reasons maintained the instructions it had already given them to abstain from taking part in any discussion or division upon this matter.

M. Kalergi would be sorry if there could be any misconception of the meaning of the attitude maintained by the Greek Delegates. Dr. Maccas having already made known the motives of his abstention, M. Kalergi explained that he also was in the same position as when the Conference was made acquainted for the first time with the tariff question at the meeting of the 31st May. He would join in the discussion because, as he had already declared, the proposition of the French Delegates seemed to prove worthy of being taken into serious consideration for the simple reason that it emanated from the representatives of the Government which had taken the initiative in calling the Conference together. But at the same time, not having received instructions from Athens to discuss

the matter, he wished it to be understood that his opinion was purely personal, and that his Government would not in any way be bound by his views.

M. Segovia suggested the substitution of some other word for the word *sincere* in the second conclusion. It never occurred to the mind of any body to cast a doubt upon the entire good faith of the valuations which had been taken as a base in fixing the duty of 26 paras: the employment of the word *sincere* might give rise to a contrary supposition.

Count de Lallemand replied that the figure of 6,000,000 tons was not of a nature to admit of authentic proof, since it was derived from approximative calculations, made upon insufficient data. For this reason the Committee and the reporter had employed the word *sincere* rather than the word *authentic*.

Dr. Bartoletti explained that all the figures quoted in the report of the Council of Health had been taken from the registers of the sanitary administration. Annual tables of the movements of shipping in Constantinople as well as the other ports of the Empire had been drawn up, and the average of the last three years taken. The duty had been assigned to a special Committee.

M. Kalergi did not think that the Conference ought to decide upon the quota of the duty to be established. That was a question for discussion between the various Governments when the time arrived for making the international arrangement, of which the labors of the Conference ought to be the base.

Dr. Fauvel, having been a member of the Committee appointed by the Superior Council of Health to consider the question, thought it useful to enter upon some explanation on the subject of the valuations upon which the duty of 26 paras was based. In order to cover, by means of this tax, the expenses of the Department, estimated at 4,500,000 piastres, an amount which would not appear exaggerated to anybody acquainted with the organisation of the Ottoman Sanitary Department, the general measurement of the shipping had been calculated, exclusive of mail steamers, at an average of 6,000,000 tons per annum. This was not the figure that was found in the tables of the sanitary administration, according to which the measurement would be 7,758,555 tons, but it must be taken into consideration that these 7,758,555 tons did not represent a fleet of this tonnage, but rather the total of the calls of each ship at each port, the sanitary dues being paid, according to the present system, every time a ship entered a port. The duty of 26 paras laid down in the proposed tariff having, on the contrary, to be paid once for all on the first occasion of touching without regard to the number of ports at which a ship might put in afterwards, the Council of Health had assumed that this was a cause of inexactitude, and it had therefore deducted 1,758,555 tons from the total above given. Dr. Fauvel had no doubt that this necessarily approximative deduction was too small, the paying tonnage would certainly remain below 6,000,000 tons; but a larger deduction would have

necessitated an augmentation of the duty of 26 paras, and for a first trial they should rather keep within than go beyond the reality. After a trial of three years, if it were proved that the administration continued to encounter a deficit,, the means of remedying it should be taken into consideration. Thus, therefore, in Dr. Fauvel's opinion, the tax of 26 paras, far from being exaggerated, would rather be below what was necessary in order to cause the expenditure of the Ottoman sanitary administration not to exceed the receipts.

Dr. Fauvel said, in conclusion, that the preceding remarks applied also to mail-steamers, which were not comprised in the total of 6,000,000 tons. Their paying tonnage had been estimated approximatively at 3,500,000, but, as had been said in the table annexed to the report of the Committee of the Council of Health, this figure was so considerable only on account of the great number of compulsory calls of these mail packets.

Count de Lallemand pointed out that the observations made by Dr. Fauvel supported what he had said in justification of the use of the word *sincere*, and the impossibility of replacing it by some other word, such, for instance, as *authentic* or *exact*. Experience alone could demonstrate whether the estimate of future expenditure or receipts, which was always more or less contingent upon eventualities, was exact or authentic.

The second conclusion was put to the vote and adopted by a majority of thirteen votes against one, with nine abstentions.

For :—M. Segovia, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Sawas, Chevalier Pinto de Soveral, Dr. Gomez, Baron Testa, Dr. Mühlig, M. Stenersen, Dr. Baron Hübsch, His Excellency Salih Effendi, and Dr. Bartoletti.

Against :—M. Kalergi (under reserve).

Abstentions :—Dr Sotto, Dr. Goodeve, Dr. Dickson, Dr. Maccas, M. Vernoni, M. Keun, Dr. Millingen, Dr. Pelikan, and Dr. Bykow.

M. Segovia asked whether the third conclusion could not be made less affirmative. In figures everything was relative ; it was necessary to take into account the greater or lesser dearness of the Department the expenditure of which it was sought to cover, and also to consider that if a tax is moderate in such and such a country, it does not follow that it is not excessive in such another.

Chevalier Pinto de Soveral and Count de Lallemand stated that this remark, the justice of which, by the way, they did not dispute, only demonstrated once again the moderation of the proposed tax. Without speaking of the dearness of living in Turkey, the extent of the frontiers of the Empire, and the necessity of maintaining sanitary physicians on the land frontiers of countries where few physicians consent to live, caused the Department to be more costly in Turkey than in many other countries.

Dr. Bartoletti added, in support of what had just been said, that the rate of pay allowed to the agents of the Sanitary Department was

such, that the necessity for an increase became more apparent every day. Outside of the large towns, where the physicians were in a position to create resources which compensated for the insufficiency of their remuneration, the sanitary administration experienced the greatest difficulty in finding physicians contented with the terms offered to them; and the remuneration of the subordinate agents was still worse.

M. Segovia said that he had not meant to dispute the moderation of the duty proposed by the Committee. He did not insist, moreover, upon his remarks: it was sufficient if they were mentioned in the minutes.

Dr. Fauvel did not blame the Committee for having thought that it was better not to enter into the question of assessment. However, as this question was the stumbling block which had hitherto prevented the adoption not only of the proposed new tariff, but also of that which had preceded it, Dr. Fauvel thought it needful to explain, but as a matter of information merely it must be understood, the scale of the assessment proposed by the Council of Health. Besides the steamers specially engaged in the conveyance of merchandise or even of passengers, there were the mail steamers, which also carried on the postal service. The first, free in their movements, might leave when they pleased, and another very important consideration was that the roadsteads being always very costly, they need not stop anywhere but where their interests call them: in a word, they are in the same conditions, and have nearly the same speed as sailing ships, and may be subjected to the same dues. The mail packets, on the contrary, are obliged to put in at certain ports, forced to leave on particular days and at particular hours, whether their loading is complete or not, and even if they should be exposed to risk from the state of the sea. The situation being evidently not the same, it has been calculated that if the mail-packets were subjected to the same dues as the others, they would pay, all proportions being maintained, six or eight times more than the latter. Dr. Fauvel proved this by the following instance; The mail-packets on the line from Constantinople to Trebizond touch at ports of call, on the voyage to and fro, ten times: if they were made to pay the duty of 26 paras on each occasion, they would have to disburse 260 paras altogether. Now, a sailing vessel, or even a steamer when it does not do postal work making the same voyage, would most frequently go direct, and, according to the draft tariff, would pay the duty consequently only once or twice, on its arrival at Trebizond and on its return to Constantinople, if it enters into commercial operations there, or 52 paras instead of 260. The necessity of a separate tariff for the purpose, not of favoring mail steamers, but simply to re-establish the equality between them and other vessels, being once admitted, the Committee of the Council of Health had, after many endeavors, hit upon the duty of 4 paras which seemed to it, applied to mail packets, to be equivalent to the duty of 26 paras. Dr. Fauvel repeated that it was so far from being a partial

tariff, that it gave rise to objections on the part of several Navigation Companies which it might be supposed to favor, and that it was these very objections which contributed to the failure of the project.

M. Stenersen regretted that Dr. Fauvel had raised a question which the Committee had thought, and rightly, that it should avoid. Desirous of gaining time for the Conference, and not wishing therefore to lead to a discussion upon the subject, he (M. Stenersen) confined himself to asking that it should be recorded in the proceedings that his opinion was diametrically opposed to that of Dr. Fauvel.

Chevalier Pinto de Soveral pointed out that the remarks of Dr. Fauvel, who had not been a member of the Committee, ought to be considered simply as information; besides Dr. Fauvel himself had put them forward as such.

The 3rd conclusion was put to the vote and accepted.

Twelve votes *For*:—Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Sawas, Chevalier Pinto de Soveral, Dr. Gomez, Baron Testa, Dr. Mühlig, M. Stenersen, Dr. Baron Hübsch, H. E. Salih Effendi, and Dr. Bartoletti.

Abstentions:—Dr. Sotto, M. Segovia, Dr. Goodeve, Dr. Dickson, M. Kalergi, Dr. Maccas, Dr. Salvatori, Dr. Millingen, Dr. Pelikan, and Dr. Bykow.

The adoption of the 4th conclusion gave rise to no remark.

Thirteen votes *For*:—M. Segovia, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Sawas, Chevalier Pinto de Soveral, Dr. Gomez, Baron Testa, Dr. Mühlig, M. Stenersen, Dr. Baron Hübsch, H. E. Salih Effendi, and Dr. Bartoletti.

Abstentions:—Dr. Sotto, Dr. Goodeve, M. Kalergi, Dr. Maccas, M. Vernoni, Professor Bosi, Dr. Millingen, Dr. Pelikan, and Dr. Bykow.

M. Kalergi was of opinion that the 5th conclusion should be suppressed: it seemed to him to be useless. It referred to administrative details which were not within the province of the Conference, and with which it had no right to meddle. Finally, if a vote were taken on this part of the draft tariff, why not then discuss the whole project altogether?

Dr. Sawas and M. Stenersen objected to M. Kalergi that the conclusions of the report depended upon each other, and that they were all, therefore, to just the same extent, within the province of the Conference.

Dr. Fauvel and Count de Lallemand added that the 5th conclusion related to general principles which were the base of the report of the Council of Health, and that its adoption did not infer that of the draft tariff. The thing was a simple desire regarding a better direction to be given to the product of the taxes levied.

Dr. Bartoletti observed that the Conference could have the less hesitation in expressing such a desire that the Imperial Government

consented to leave to the Council of Health the administration of the revenues of the Sanitary Department.

The third conclusion was put to the vote and adopted by 13 votes: M. Segovia, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Sawas, Chevalier Pinto de Soveral, Dr. Gomez, Baron Testa, Dr. Mühlig, M. Stenersen, Dr. Baron Hübsch, H. E. Salih Effendi, and Dr. Bartoletti.

Abstentions:—Dr. Sotto, Dr. Goodeve, Dr. Dickson, M. Kalergi, Dr. Maccas, M. Vernoni, Professor Bosi, M. Keun, Dr. Millingen, Dr. Pelikan, and Dr. Bykow.

The whole of the report together was then put to the vote and adopted by 14 votes, *viz.*, M. Segovia, Dr. Monlau, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Sawas, Chevalier Pinto de Soveral, Dr. Gomez, Baron Testa, Dr. Mühlig, M. Stenersen, Dr. Baron Hübsch, H. E. Salih Effendi, and Dr. Bartoletti.

Abstentions:—Dr. Sotto, Dr. Goodeve, Dr. Dickson, M. Kalergi, Dr. Maccas, M. Vernoni, Professor Bosi, M. Keun, Dr. Millingen, Dr. Pelikan, and Dr. Bykow.

The British Delegates requested that it should be recorded that they have not joined in the discussion or vote upon anything connected with the proposed reform of the sanitary tariff.

H. E. Salih Effendi, both as President of the Conference and as a Turkish Delegate, thanked the members of the Committee, and particularly Count de Lallemand.

Baron Testa, after expressing his regret at seeing the Delegates of the Powers most interested in the question of the reform of the Turkish sanitary tariff refrain from joining in the discussion, proposed that the Conference should express the wish that the Sublime Porte, backed up by the votes of the Conference, should without delay commence fresh negociations in the view of hastening the solution of this important matter.

Dr. Sotto, who had been absent during the course of the meeting, declared that his abstention was the result of the instructions he had received. As M. Vetsera had already stated, the Imperial Government was of opinion that the Conference was not competent to take up the matter.

The Italian Delegates could only refer to the declaration they had made at the commencement of the discussion.

Dr. Sawas seconded Baron Testa's proposition.

This proposition was adopted by a majority of 15 votes: *For*:—Dr. Monlau, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, M. Kalergi, Dr. Maccas, Dr. Sawas, Chevalier Pinto de Soveral, Dr. Gomez, Baron Testa, Dr. Mühlig, M. Stenersen, Dr. Baron Hübsch, H. E. Salih Effendi, and Dr. Bartoletti.

Nine Abstentions:—Dr. Sotto, Dr. Goodeve, Dr. Dickson, M. Vernoni, M. Bosi, M. Keun, Dr. Millingen, Dr. Pelikan, and Dr. Bykow.

Dr. Bartoletti, reporter of the 2nd Committee on the 3rd group *(Quarantine measures)*, then read the first section of chapter I of the report of this Committee.

Dr. Mühlig thought it would be expedient to modify the conclusion of this section, for it did not seem to him to reply sufficiently to what was said in the text. Experience had proved that quarantines, such as were formerly in vogue, did not suffice to prevent the importation of cholera, and indeed so far from that, that it sometimes favored it: the proof, therefore, was conclusive. Dr. Mühlig proposed to modify the conclusion thus:—"The Committee is of opinion that the lessons to be "derived from the experience of this first period of quarantines *are not* "*favorable to the system hitherto generally followed.*"

Dr. Monlau similarly criticised the conclusion. If it was clearly demonstrated by experience that a badly effected quarantine, or one insufficient in duration, was powerless to arrest cholera, it was not the less proved that a rational and well applied quarantine constituted an effectual guarantee.

Dr. Monlau again objected to the title of the report, *Quarantine measures applicable to choleraic arrivals*, as not being sufficiently general. The use of the word *arrivals* seemed to indicate that there was no question of any but measures applicable to ships.

Dr. Sotto concurred in Dr. Mühlig's remarks.

Dr. Bartoletti replied that the second section of chapter I explained the conclusion of the first: if the application of quarantine measures had not always afforded good results, there were cases where it had not been so. It could not, therefore, be said yet that the proof was conclusive. As for the title, the word *arrivals* applied equally as well to arrivals overland as to maritime arrivals.

Dr. Sawas did not offer any opposition to Dr. Mühlig's remarks being taken into consideration, these observations containing nothing opposed to the spirit of the report; and Dr. Mühlig having admitted the text of the section under discussion, the objection urged was substantially a matter of form.

Dr. Maccas replied that in experimental science a single experiment does not always lead to a positive or negative conclusion. Very frequently it is necessary to repeat the experiment, either because of its having been defective, or because it may be needful to multiply the experiments in order to become assured of the result observed. This, according to Dr. Maccas, was what happened in the matter of quarantines such as were applied when cholera first made its appearance in Europe. Their results were not always nor everywhere unfavorable, and, moreover, their application was always more or less defective. The Greek Delegate mentioned, as an instance, his own country, where quarantines had succeeded from their commencement; but he would ask whether it could be affirmed with certainty that this happy result was due to themselves alone, which, however, people at present, now that the experiment has been frequently repeated, have a right to believe. The

Committee could not undertake a detailed description of all the quarantine systems hitherto tried in various countries, for the work would have filled a volume by itself. It was its duty rather to draw lessons from the past, useful either for or against the system. It thought it had come as close as possible to the *truth* in declaring that the first experiments were not conclusive, and the Conference could not fail to be of the same opinion.

Count de Lallemand asked whether different opinions would not be conciliated by completing the conclusion as follows :—" have no conclusive value *either for or against the principle of quarantines.*"

Dr. Sawas pointed out that what Dr. Mühlig wanted to see introduced into the conclusion was contained in the text.

Dr. Millingen stated, as had been done before, that every body was agreed upon the substance of the text, and that the question now, therefore, was merely a matter of form. The sentence, at the end of the first paragraph of page 3, "what lesson could be derived from it but that of the inefficiency of such means to prevent the invasion of a healthy country by cholera from an infected country," was the best reply that could be given to the question, the solution of which was under discussion.

The President put successively to the vote the text of the first part of the 1st section of the report, the amendment proposed by Dr. Mühlig, and finally the conclusion, as it stood, of the Committee.

The text was adopted unanimously.

Dr. Mühlig's amendment was rejected by eighteen votes against four : *For* :—Dr. Sotto, Dr. Monlau, Baron Testa, and Dr. Mühlig. *Against* :—M. Vetsera, Count de Lallemand, Dr. Fauvel, Dr. Goodeve, Dr. Dickson, M. Kalergi, Dr. Maccas, Professor Bosi, M. Salvatori, Dr. Millingen, Dr. Sawas, Dr. Gomez, Dr. Pelikan, Dr. Bykow, M. Stenersen, Dr. Baron Hübsch, Dr. Bartoletti, and Dr. Salem Bey.

The conclusion, as it stood, was adopted by a majority of 18 votes against 2, with three abstentions.

Against :—Baron Testa and Dr. Mühlig.

Abstentions :—Dr. Sotto, Dr. Monlau, and M. Keun.

The 2nd section of chapter I, text and conclusion, was then read.

Dr. Mühlig objected that this conclusion, unlike the other, was too absolute. Without denying the principle, he thought that the report did not quote a sufficient number of facts to place the Committee in a position to affirm that "it was incontestible that quarantines "established on rational bases, bases in conformity with the progress "of science, might serve as an efficacious barrier against the invasion "of cholera." It was necessary to suppress the word *incontestible.*

Dr. Sawas, on the other hand, required the retention of the word *incontestible.* The principle shown in the conclusion was the base of

the labors of the Conference. Anything, therefore, which might tend to render the affirmation of this principle less absolute, ought to be rejected. It would besides be easy to add numerous facts to those contained in the report.

Dr. Goodeve would prefer, like Dr. Mühlig, to see the conclusion rendered less affirmative. It was evident that quarantines established on bases which were rational and in conformity with the indications of science were in theory an efficient guarantee, but could the same thing be affirmed of quarantines as really practicable? The report having quoted the instance of what had happened at New York as a striking proof of these importations having been averted, thanks to intelligent measures of segregation, Dr. Goodeve remembered that cholera had ended by penetrating into the United States. It might, it was true, have entered by some other route than that of New York, but after all this fact lost no part of its value unless proof to the contrary were adduced, and it would be another reason for the Conference to show itself somewhat less categorical.

Dr. Mühlig seconded these remarks. The great difference between segregation in theory and in practice must be taken into consideration.

Dr. Bartoletti said there was no want of facts to bring forward in support of the conclusion; they were to be found in the continuation of the report, and especially in the historic review. In regard to the importation of cholera into the United States, the posterior fact, in his opinion, did not weaken the anterior facts mentioned in the report.

Dr. Fauvel, who said he was in favor of retaining the word *incontestible*, remarked that this word did not bear, as Drs. Mühlig and Goodeve seemed to believe, upon the necessary efficacy of quarantines, but upon the word *might*, everybody decisively admitting that well practised quarantines might constitute an efficient guarantee. There was, it could be seen, nothing absolute in the conclusion; it confined itself to asserting its *possibility*, which possibility nobody denied.

Professor Bosi believed that the enquiries of the Conference had abundantly proved the efficacy of quarantine measures when well applied. In his opinion, if there was any objection to urge against the conclusion, it was that it admitted only the possibility of this efficacy: in a word, that it was not sufficiently affirmative.

Dr. Mühlig not insisting further, the 2nd section of chapter I was put to the vote as it stood (text and conclusion), and adopted *nem. con.*

The meeting terminated at 4-30 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

No. 44, dated 8th May 1867.

From—SIR STAFFORD H. NORTHCOTE, BART.,

To—His Excellency the Governor General of India in Council.

In continuation of Viscount Cranborne's Despatch of the 31st of January last, No. 8, I forward herewith, for your information and guidance, and for communication to the several Local Governments, a copy of a Despatch* from Her Majesty's Ambassador at Constantinople, and of its enclosures, together with a copy of a Despatch† addressed to Her Majesty's Ambassador at Constantinople by Colonel Stanton, which have been transmitted to this Department from the Foreign Office, respecting the sanitary measures proposed to be applied this year to the pilgrimage to the Hedjaz.

* Dated 2nd April 1867, No. 23, and 9 enclosures.

† Dated Cairo, 19th April 1867, No. 38.

2. I likewise enclose a copy of Protocols 38, 39, 40, and 41 of Proceedings of the Cholera Conference at Constantinople.

No. 23, dated 2nd April 1867.

From—LORD LYONS,

To—LORD STANLEY.

With reference to my Despatch of the 1st January last, marked Commercial, No. 1, and to your Lordship's Despatch of the 2nd February last, marked Commercial, No. 5, I have the honor to transmit to your Lordship a copy of a Despatch from Colonel Stanton, stating that he sees nothing seriously objectionable in the sanitary measures proposed to be applied this year to the pilgrimage to the Hedjaz.

1. From Colonel Stanton, 9th January 1867, No. 5.
2. „ Dr. Dickson, 7th March 1867.
3. „ Dr. „ 24th March 1867.
4. Instructions to Hedjaz Commission of 1866.
5. „ to Director, 1867.
6. „ to Inspectors, 1867.
7. From Dr. Dickson, 27th March 1867.
8. „ Fuad Pacha, 12th March 1867.
9. To Colonel Stanton, 2nd April 1867.

2. These measures are explicitly stated to be intended for the pilgrimage of this year only. I have, nevertheless, thought it advisable to abstain from committing Her Majesty's Government to any formal approval of them, or consent to them. I have contented myself with allowing the British Delegate to the Board of Health to let them pass without remonstrance, and without special amendment.

I have the honor to transmit to your Lordship herewith copies of three reports from Dr. Dickson, and copies of the instructions given by the Board of Health here, to members of the Sanitary Commission of the Hedjaz.

3. I enclose also a copy of a note from Fuad Pacha, requesting that an Ottoman corvette, about to be sent from Bassorah to Jeddah for sanitary purposes, may be supplied with coals from British Depôts in the Persian Gulf and at Aden. I have requested Her Majesty's Consul General at Bagdad, and Her Majesty's Agent in Egypt, to take measures for giving effect to this request.

4. Finally, I enclose a copy of a Despatch which I have addressed to Colonel Stanton, calling, with reference to the instructions of the Board of Health, for a report on the best mode of carrying out effectual sanitary measures without injury to British interests, and without prejudice to the health, comfort, or religious sentiments of Her Majesty's Mahomedan subjects.

Dated 9th January 1867.

From—COLONEL E. STANTON,
To—LORD LYONS.

I have the honor to acknowledge the receipt of your Excellency's Despatch No. 1 of the 1st instant, transmitting a copy of a report addressed to your Excellency by Dr. Dickson, British Delegate to the Constantinople Board of Health, and also a copy of a report of a Committee of that Board on the subject of quarantine and of hygienic measures to be applied to the approaching pilgrimage to Mecca; and in obedience to your Excellency's desire to be furnished, as early as possible, with my opinion on the report of the Committee, have the honor to state that I have carefully perused these papers, and cannot see any thing seriously objectionable in the measures suggested to be taken.

I beg also to report to your Excellency that I have given instructions to the British Delegate to the Alexandria Board of Health, who is, however, not a medical man, none such being available for this service, to report either directly or through the British Consulate to your Excellency, any circumstances within the control of the Alexandria Board which might be calculated to affect British interests, or invite discussion at Constantinople, in order that timely notice may be given to Dr. Dickson of all such matters from this country as are likely to be brought before the Constantinople Board of Health.

Dated 7th March 1867.

From—DR. E. D. DICKSON,
To—LORD LYONS.

I have the honor to inform your Excellency that the Porte has sanctioned the sanitary measures proposed by the Board of Health for regulating the next pilgrimage to Mecca, as stated in my report of the 19th December 1866; but, owing to the absence of any Government

steamer in the Red Sea, it cannot grant one for the special service of the Hedjaz Commission. The Board of Health, however, insists on the necessity of this measure, to enable the Commission to make a survey of the Red Sea, and fix on the most eligible locality where a lazaretto could, in future, be established for the performance of quarantine on arrivals from India; and will, therefore, renew its application to the Porte.

The Board has named Halil Effendi, Director, or Chief of the Commission; Dr. Castaldi, Inspector at Jedda; Dr. Milesian, Medical Officer at Jedda; and Dr. Soci, Medical Officer at El-Wedge; and, as soon as the President of the Board has appointed the other Members of the Commission, it will proceed without further delay to its destination.

Dated 24th March 1867.

From—DR. E. D. DICKSON,

To—LORD LYONS.

I have the honor to inform your Excellency that, on the 14th instant, the Hedjaz Commission left this place for Alexandria, from whence it will proceed, without delay, to the Red Sea.

The members composing the Commission are the following:—Halil Effendi, Director in Chief, whose head quarters will be at Mecca.

Dr. Castaldi, Inspector, whose head quarters will be at Jedda.

Doctor Malezian, Medical Officer, to reside at Jedda.

Doctor Soci, Medical Officer, to reside at El-Wedge.

Seven Mahomedan physicians besides have been added to the above number, and will be stationed in various parts of the Hedjaz, *viz.*, Mustafa Effendi, Servet Auf Bey, Nouri Ismail Effendi, Mehined Effendi, Arif Ibrahim Effendi, Hussein Halil Effendi, and Raif Mehined Effendi.

The Commission will be guided by the rules drawn up for it, as stated in my report of the 19th December 1866, to which have been added the printed instructions that governed the Hedjaz Commission of last year. Special instructions have, moreover, been given to the Director, and also to the Inspector. I herewith enclose copies of them.

An Ottoman steam corvette, at present stationed in the Persian Gulf, has been placed at the disposal of the Hedjaz Commission, for the purpose of lending it assistance when required, and to enable the Inspector to make a survey, more especially at Bab-el-Mandeb, Obokh, and at the islands of Faisan and Camaran; and ascertain where a lazaretto establishment could best be placed, in accordance with the views proclaimed by the late Cholera Conference.

Intelligence, received by the Board of Health from Alexandria up to the date of the 6th instant, declares the public health in the Hedjaz to be excellent.

Instructions given by the Superior Board of Health to the Hedjaz Commission.

The Sanitary Commission of the Hedjaz is composed of a President, Ahmed Effendi, and two physicians, Dr. Akif Bey and Dr. Yusuf Bey. Its mission is temporary, and not to exceed six months, unless arranged otherwise by higher authority.

The members of the Commission should submit to the Board of Health fortnightly, and oftener if necessary, and either singly or collectively, a circumstantial report upon the object of their mission. Reports separately submitted by the physicians should be written in French.

This delicate mission requires great tact and management with regard to the population as well as the places to be explored, and the Commission should proceed with the greatest circumspection, while, at the same time, it should carry out its orders with scrupulous precision.

The Commission is ordered to study the question of cholera in the Hedjaz, a complex question, embracing, in a prophylactic point of view, the past, the present, and the future.

As to the past, the Committee should commence an enquiry into the epidemics which have prevailed every year at Mecca for some years past; but it ought especially to enquire into the last, which was the most violent of all in its progress and its ravages. It should endeavor to ascertain with precision whether cholera was engendered spontaneously in the Hedjaz, or whether it was imported. If it is ascertained to have been imported, the Commission should show the way by which it entered, whether by land or by sea, and whether it arrived simultaneously with the pilgrims or before the pilgrimage. If, on the contrary, it is found that cholera is endemic in the Hedjaz, and that it is spontaneously engendered there, the Commission should apply itself to the discovery of the causes conducing to its local generation, whether these causes are local or inherent to the pilgrimage; it should enter upon a profound and conscientious consideration of these causes, so as to enlighten the administration upon this important question. At the same time it should indicate, with as great precision as possible, the outbreak of the last epidemic, its progress, the number of deaths in proportion to the number of pilgrims, and the mode of propagation in the country and beyond it. In this last point of view, it should be careful to obtain authentic information of the manner in which the transport of the pilgrims from Jeddah to Suez, on board the steamers navigating the Red Sea, is carried on. It is all the more necessary to become acquainted with this last circumstance, that it is of the very greatest interest to the future of the public health of Egypt, and, therefore, of the numerous States with which this country has commercial relations.

Whatever may be the result of the enquiry as regards the past, the Commission should employ the greatest activity in obtaining information as to the present sanitary condition of the Hedjaz, as well as of the pilgrims, on the arrival of each batch. It should write a

correct description of the different pilgrimage stations, pointing out such elements of insalubrity as may be present in each. In connection with this matter, the encampments at Arafat and Wadi-Mina should receive especial attention, and the Commission should ascertain the means of preventing the infection arising from the consequences of the crowding of men in confined spaces, as well as from the decomposed remains of the animals slain in the Valley of the Sacrifice. It should carefully examine the conditions of insalubrity appertaining to the towns on the Arabian coast, where pilgrims land, and whence they embark on their departure. Besides Jeddah and Yambo, which should be the chief objects of its enquiries in the point of view of the landing and shipping of the pilgrims, it should endeavor to collect precise information regarding the ports of Mocha, Confuidah, and others on the Arabian coast in connection with the pilgrimage. The Commission should also visit the town of Medina, which is one of the stations most frequented by the pilgrims; it should make the same researches, and, if necessary, adopt the same measures with regard to Mecca. After having stated the causes of insalubrity and disease, the Commission should consult with the constituted authorities of the country as to the works to be executed, with a view to their removal, or, at any rate, the diminution of their effects. To provide against the approaching pilgrimage, the Commission should organise encampments so arranged as to avoid crowding and its deleterious effects.

If cholera should have existed among the pilgrims arriving from India or any other country, the Commission should provisionally organise quarantines at the ports of arrival, in spacious encampments, well open to the air, and as far removed as possible from inhabited localities. The duration of the quarantine, in such cases, should be proportioned to the gravity of the danger, but it should never exceed 15 days after the occurrence of the last accident in an infected group. It is to be understood, of course, that these precautions, dictated as they must be by urgent circumstances, can only be of a temporary and provisional nature, seeing that it rests with the superior sanitary administration to decide as to the definite quarantine system to be applied to the pilgrimage.

In the event of the development of cholera, and its propagation in caravans, the Commission should exercise all necessary anxiety and activity in the separation of such groups as are infected from such as are not so. It should render assistance to the sick to the utmost extent of its means of action, and it should spread among the people advice upon public and private hygiene.

When the separation of the pilgrims commences, previous to their return to their respective homes, the Commission should watch over their departure. It is especially at Jeddah, where there is the greatest gathering of the pilgrims with a view to embarkation, that the Commission should exercise great energy in the execution of such hygienic and prophylactic measures as it may deem necessary to apply either to the pilgrims or the vessels about to leave. It should visit all the

passengers, the number of whom it must fix in accordance with the capacity of the ship, so as to obviate crowding: it should prevent persons suffering from cholera, if there are any such, from being received on board, and it should have them properly attended to in appropriate places, and, preferentially, under tents. It should deliver bills of health to the ships, being careful to note the sanitary condition of the place of departure, the number of passengers, and the hygienic conditions on board.

At Jeddah, as well as at Mecca and Medina, where masses of pilgrims assemble at stated periods, the Commission should cause local measures of salubrity and hygiene to be carried out. It should prevent, as far as possible, all crowding in khans, inns, and coffee-houses, and it should invite the serious attention of the local authorities to the quality of the provisions exposed for sale in the markets. It should insist, above all, that trenches (to serve as latrines) shall be dug at a convenient distance from all encampments, that the choked-up wells at Wadi-Mina should be cleared out, and be used again, in accordance with the old custom, for the collection of the blood and remains of the animals slain during the sacrifices. Finally, it should manage to provide shelter for the poverty-stricken and almost naked pilgrims, whom the local authorities should provide with tents to secure them during the day from the scorching rays of the sun, and at night from the extraordinary humidity peculiar to that climate.

To sum up: the orders to the Commission are: 1*st*, to institute an enquiry as to the epidemics of cholera in the Hedjaz, and especially as to the last, so as to ascertain whether its origin is endemic or exotic; 2*nd*, to study the present sanitary condition of the country, to indicate the causes of insalubrity which may engender cholera, or develop it in the event of its importation; 3*rd*, to propose measures of sanitation and prophylaxy, to adopt such measures provisionally in urgest cases, until the decision of the superior authority as to the definite and permanent system to be adopted; 4*th* and *lastly*, to submit to the Board of Health detailed and continuous reports upon its observations, and the measures deemed by it to be necessary, or carried into execution in accordance with the tenor of the present instructions, without prejudice, however, to such fresh instructions as the Board of Health my hereafter find it necessary to transmit to it.

Read to the Board of Health, and approved at its meetings of the 9th and 16th January 1866.

Dated March 1866.

To Dr. Castaldi.

M. Le Docteur,—The Intendancy informs you that, by order of the Superior Board of Health, you have been nominated Inspector of the medical mission to the Hedjaz for the year 1867.

The objects of this mission may be summed up under three heads, *viz.*, 1*st*, the adoption of such measures as may be rendered necessary by circumstances to prevent cholera from penetrating into the Hedjaz with the arrival of the pilgrims, and to regulate the conditions of departure of the latter on their return *viâ* Egypt, so as to diminish the danger of importing the disease into this country; 2*nd*, the organisation of a system of hygienic measures applicable to the places of pilgrimage, with a view to lessen the chances of the development of cholera among the pilgrims; 3*rd*, the undertaking of a series of studies on the coasts of the Red Sea, and the collection of all information adapted to enlighten the administration upon the important subject of the establishment of a definitive and permanent quarantine applicable to the pilgrimage.

Last year the Commission despatched to the holy places undertook and executed hygienic measures upon a considerable scale at Jeddah, at Mecca, and at Medina; and, as to the return of the pilgrims, it succeeded in lessening the danger of the importation of cholera into Egypt; but the problem of the studies that were to conduce to a permanent quarantine establishment has not been solved, owing to circumstances into which it is at present useless to enter.

Consequently, while we reckon upon you to fulfil the duties incumbent upon us in the point of view of this year's pilgrimage, by applying the hygienic and quarantine measures which were put into practice last year, and by completing them, you are invited to effect the necessary studies in the point of view of a permanent quarantine establishment. With this object in view, you will have to visit the islands of Tarsan and Çamaran, the Straits of Bab-el-Mandeb, the States situated on the Straits, the position of Obok upon the African coast beyond Bab-el-Mandeb, and any other locality which may offer conditions more or less favorable to the proposed end. In this inspection, which you will have to carry out immediately after the departure of the pilgrims from Jeddah, for the purpose of returning to their homes, you must be accompanied by Mustafa Effendi and another of the Mussulman physicians of the mission, whose selection is left to you in concert with the Director, Halil Effendi. The Imperial Government, it is scarcely necessary to add, will place a steamer at your disposal to conduct you wherever your tour of inspection will call you, and the vessel will also be used by you for the exploration of the coast and the islands above-mentioned, including Bab-el-Mandeb and Obok.

The Intendancy does not doubt, M. le Docteur, that you will acquit yourself of your important and delicate task with that devotion and intelligence, without which the object of your mission can be but incompletely attained, or rather not attained at all in its most essential part.

You will find, M. le Docteur, in the documents that have emanated from the International Sanitary Conferance, and the notes accompanying them, valuable hints for adoption in your explorations, and we need not, therefore, enter into detail at greater length regarding this subject.

As for the hygienic, and if necessary the quarantine, measures to be adopted in the present state of things, you will act in conformity with the instructions given last year, and with the contents of the report of the Commission submitted to the Government, copies of which we forward herewith. This report modifies in certain respects the instructions of last year, and we therefore direct your attention to it, so that you may inform yourself of the changes to be made in the said instructions.

The result of the arrangements made in consequence of this report are that, with the exception of the Jeddah service, and the presence of a Christian physician at El-Wedge, all the ports on the coast of the Hedjaz and of Yemen, as well as in the interior, have been placed in charge of the Mussulman members of the mission, presided over by Halil Effendi with the title of Director, to whom the administration has given special and detailed instructions drawn up in the Turkish language.

The *personnel* of the mission must be distributed in the following manner :—The Director Halil Effendi, as well as Servet Effendi and Medim Effendi, are to reside at Mecca ; the inspector and Dr. Malezian at Jeddah ; Mustafa Effendi, sometimes at Mecca, and sometimes at Jeddah, according to the necessities of the Department; M. Lozzi at El-Wedge ; Nouri Effendi at Medina, Arif Effendi at Yambo, Poïf Effendi at Hodeïdah or Confuidah, as may be convenient; and lastly Hossein Effendi at Moka.

In regard to the inspection of the coast to be conducted by yourself, you will work in harmony, as far as possible, with the Director, and you will give your own instructions, when necessary, to the Mussulman or Christian physicians stationed at the various places on the Arabian coast, which instructions they are bound to obey, always provided that they correspond with the spirit of the instructions of the administration, which, as may be easily understood, do not provide for everything beforehand.

The regularity of the service and the success of the mission depend upon a good understanding between the inspector, the director, and the physicians of the mission. These physicians will submit their reports to you, and you will transmit them to the administration, summing them up and completing them according to circumstances.

In the service of inspection, and your relations with the Director at Mecca, and with the local authorities at Jeddah, you will have, as your intermediate agent, Dr. Mustafa Effendi, who is attached to you as sub-director and sub-inspector.

Finally, the Intendancy conclude by expressing to you its confidence that you will acquit yourself of your mission with all the zeal and courage of which you are capable. It now confirms what it told you verbally that your honoranium is fixed at 8,000 piastres per mensem, and a lump sum of 15,000 piastres for your travelling expenses. It considers it unnecessary to remind you that the fêtes of the pilgrimage are at hand, and that consequently you should proceed on your journey without any

interruption, or avoidable halts, which may delay your arrival at your destination.

Summary of the Report drawn up by Ahmed Effendi, President of the Hedjaz Sanitary Commission, in 1866, *and forwarded, in virtue of a Vizieral letter to the Vilayet of the Hedjaz.*

The streets and places about Mecca should be constantly kept clean. This was accomplished in 1866 at the expense of the Hedjaz Treasury; but in future it ought to be done at the public cost, except during the time of the pilgrimage (that is, from the commencement of Ramazan to the end of Zilkhidjeh), when the expense would fall too heavily on the inhabitants, and ought, therefore, to be defrayed by the Hedjaz Treasury. Within Mecca and its environs there are about three thousand "ashe" or huts built of mats, consisting of one room each, but with no latrines. Part of these huts are inhabited by persons in easy circumstances, and the rest by dirty vagrants. These habitations should be occupied solely by respectable people who could keep them clean, while those of the other classes should be removed from the neighbourhood of Mecca to some convenient spot, at least an hour's distance from that city; wide alleys and latrines should be made amongst them, and other huts should not be erected in the room of those taken away.

These "ashe" are all private property, the cost of building them varies from 80 to 700 piastres each; and they are easily taken down. Those occupied by paupers have been constructed by themselves; hence it would require a grant of money in order to defray the expense of displacing them.

Mecca is never entirely free from pilgrims, more especially from Ramazan to the end of Muharem; a crowd collects there, which is far from desirable. The streets are not narrow; but shop-keepers erect benches across them, during the season of pilgrimage, which impede the free circulation of the thoroughfares. It would be impossible, during the great heat of summer, to keep shop-keepers *within* their shops; it is, therefore, proposed, in order to restrain, as much as possible, these encroachments on the public way, that they shall be limited to a space of two "arshins" (54 inches) for every shop.

The way called "Massa" is straight, and has shops on either side of it, with houses above them; and, moreover, it possesses a well-supplied market, much frequented by the inhabitants of Mecca. Vendors of oil and other objects, however, not satisfied with the space in front of their shops, are moreover, in the habit of extending their stalls far beyond "Massa," and thus obstruct the public thoroughfares, and the course of those pilgrims who visit the shrine of "Euméré." Besides which, the transformation of this sacred spot into a public market shocks the religious feelings of many pilgrims, and the crowd which gathers in this place endangers the public health. Since it would be impossible to limit shop-

keepers to within their shops during summer, a space of two "arshins" must here also be allowed to them for stalls; but every other concession should be abolished, and no public vendor must be allowed to enter "Massa" from the mouth of Ramazan until the termination of the pilgrimage.

Attention should be directed to the frequent out-breaks of small-pox, and Mahomedan surgeons sent to those places when this scourge prevails, for the purpose of extending the benefits of vaccination.

It is customary at Mecca to heat the public baths by burning all kinds of rubbish, instead of wood. This practice taints the air; and, according to the opinion of the Medical Officers of the Commission, it has an injurious effect upon the public health, and ought, therefore, to be discontinued.

The road which leads pilgrims from the valley of "Mina" to Mount "Arafat" is lined on either side with houses built of an irregular shape, and having projecting apartments on their upper story; these narrow the way, and cause the pilgrims to circulate with the greatest difficulty during the "hadj" or pilgrimage. The projections were, therefore, lately demolished; but it is still desirable to widen the path by at once pulling down those houses which still encroach on it, and by removing the others further back every time that they require building.

The valley of "Mina" is bounded on the Mecca side by two mountains, and on the "Mezdelefe" side by an extended plain. The Government officials, the imperial troops, and the escorts of the Syrian and Egyptian caravans are encamped close to these mountains, while the pilgrims, the native inhabitants, and the Bedouin Arabs occupy Mina. The former ought to remove their tents to convenient spots close to "Mezdelefe," while the latter would have to advance beyond them, and, as far as possible, into the plain. The better to explain this, a map has been sketched out by the local authorities for the Porte's information.

Should, therefore, the above plan be adopted, a sufficient number of latrines would have to be provided in the new localities.

To prevent the air from becoming tainted by the effluvia arising from the sacrifices, and the gathering of so many persons in one spot, and in a warm climate, thirteen "Mebze" or slaughter-houses were erected in 1866 at convenient places in the valley of "Mina"; and, moreover, 45 pits were dug at a distance of half an hour (one and a half mile) from "Mina," where the remnants of the victims were conveyed by means of carts and horses to be buried in them. These measures were only temporary, and their repetition on the occasion of every pilgrimage would cause great expense to the Treasury; it is therefore intended that the "Mebze" and pits should hereafter be situated close to each other, and built of lime and stone. But, in the meantime, to fulfil the requirements of the present pilgrimage, it will be necessary to establish immediately 12 temporary "Mebze" and the aforenamed number of pits alongside of them.

The pilgrims of the Syrian and Egyptian caravans place their tents in a systematic manner, but the other pilgrims pitch them at hap-hazard, and crowd them up together, which obstructs the passages, and confines the atmosphere. Ahmed Effendi hopes that the pilgrims will themselves feel the convenience of this mode of camping; and he, therefore, suggests that Engineer Officers be hereafter appointed to regulate the order of these camps.

The rivulet called "Ain-Zubrida" flows into the plain at the foot of "Arafat"; hence, while the pilgrims remain there, they feel no distress from want of water. This rivulet, however, does not pass into the valley of "Mina," but swerves round a mountain at a distance from it; the pilgrims, therefore, when staying at Mina, are put to great trouble and fatigue to procure their water supply from this source. Ahmed Effendi, therefore, proposes to divert the course of this stream into the valley of "Mina," or else bring its water there by means of an artificial canal; and he, moreover, deems it expedient that new tanks should be constructed at "Mina," for the purpose of holding a constant supply of water during the entire period of the pilgrimage.

As already explained, the temporary slaughter-houses being at a distance from the pits, the remnants of the sacrifices have to be carried from the one to the other upon carts, or animals. Should these, however, be remodelled according to Ahmed Effendi's plan, this transfer of the remnants will no longer be needed; but as the extensive encampments in the valley of "Mina" are never free from the carcases of dead animals and other filth which must vitiate the air, the beasts of burden belonging to the Syrian and Egyptian caravans, together with the Government Artillery horses stationed at Mecca, could be employed to remove this filth, under the superintendence of an Officer expressly named for the purpose.

The "Imaret," or pious institutions founded at Mecca and Medina for the express purpose of giving alms to indigent natives, extend their charities as well to the poor coming from India and Affghanistan; these strangers, therefore, accumulate in and about the holy sanctuary, sleep there and in the streets, and dirty every place, and not satisfied with the daily ration of soup and bread allowed them from the Imaret, they are perpetually begging and annoying the public with their importunate behaviour. To put a stop to this inconvenience, Inspectors will be stationed at Jeddah, Yambo, Ras, &c., whose duty it will be to examine these beggars on their arrival, and issue to each of them a Permit, allowing him to perform the pilgrimage on condition of his departure from the country by the end of the month of Zilhidje.

It is an undoubted fact that crowding and filth engender and propagate divers maladies.

Most of the pilgrims visit the various shrines before making the ascent of "Arafat"; and even those who have not done so, can accomplish their devotions (at Mecca) in three or four days' time. It would,

therefore, greatly contribute to the public weal were the ancient custom renewed, which, according to the local ulema, was instituted at the period of the Khalif Omer-el-Fazook, *viz., not to allow pilgrims to remain at Mecca more than* four *or* five *days*

Crowds are always everywhere inconvenient. The ceremony of lapidating the devil causes much crowding and inconvenience, and many persons are thereby injured by being hit with stones on the head, face, or eyes. It is, therefore, proposed, providing religion permits it, and excepting the great devil, to surround the localities of the two other devils with strong iron fences put up in such a manner as to prevent crowding and all dangers to the bye-standers, who will thus be enabled to stone these excommunicated spirits with all the ease and zest imaginable.

Note ! the back of the *great* devil is covered with a *hillock* of stones; and, according to the local ulema, it is not lawful to lapidate him from the *four sides*, as done to the other devils, but only *in front*, and at a level with the ground ; hence it will not be necessary to put a fence over this spot.

It is evident that eating unripe fruit, and especially melons, water-melons, and cucumbers, and indulging in the drink called adjoor, engenders maladies. As the sale of these articles could not be entirely suppressed, it would be desirable to prohibit them at least at "Arafat" and Mina, or only stop their sale for about five days, that is, from the commencement of the "Mina" ceremonies until the departure of the pilgrims. But should this prohibition distress the vendors, it might then be limited to times when an outbreak of disease occurred.

Pilgrims are generally poor, and some of them beg and importune the natives and their fellow-pilgrims, and offer an aspect of misery and distress that foils description. The travelling expenses between Alexandria and Mecca amount to at least 2,000 piastres, to which sum must be added the expenses incurred in the journey between Alexandria and one's home.

Until nearly a century back none but persons possessed of the means to defray their expenses were allowed to perform the pilgrimage, but the custom has since been abandoned. The performance of the pilgrimage being *voluntary*, it is desirable that this neglected custom were revised, for it would protect natives and pilgrims from the above annoyances, and withdraw the indigent from the distress at present arising out of their poverty.

The "Takroori" or pilgrims that arrive from London (Central Africa) belong generally to the Maleki sect of Mahomedans, or those who hold that it is not necessary for the accomplishment of the pilgrimage that a person should possess the means, but that every one who is not unwell must perform this act of his faith. Most of them being unprovided, find themselves in the greatest distress on arriving at the holy places, and are, therefore, obliged to live by begging. This poverty prevents them from taking back to their homes (as customary with pilgrims in general) gifts of merchandise ;

but they procure instead meat from the sacrifices; dry it in the sun without salt on the ground about Mina, and carry it to their country as a present. The indigent Indian pilgrims do alike for the purpose of storing provisions for their return. This process of meat drying infects the air, and must injure the public health. It should, therefore, be discontinued, or, at all events, it should only be permitted upon the further side of the mountains beyond Mina, and only in those places where no crowding exists.

According to the regulations of the hadj (pilgrims) persons returning from Arafat must be at Mezdelefe before sunrise to celebrate the ceremony of the Vakfe (halt). In order, therefore, to effect this, they quit Arafat at the time of evening prayer, and arrive at "Mezdelefe" one hour and a half after sunset. On the plea that it is contrary to ancient usage, tents are not put up here, so that both pilgrims and the natives have to lie upon the ground in the open air until morning, and this causes bowel complaints. To avoid the danger, therefore, and which becomes even more apparent when the pilgrimage occurs in winter, it is necessary that tents shall be erected at "Mezdelefe."

Notwithstanding the great trouble taken in 1866 to cleanse the valley of "Mina," and that slaughter-houses were established for the killing of the victims, pits dug to receive the remnants, and every care taken for their prompt removal; and notwithstanding that, every exertion was made to prevent the killing of the victims in any places but those indicated, and that this was expressly forbidden by the "Delhi Bashi," or chief conductors of the ceremonies, as well as by the other officials, yet the Police Agents discovered that many persons sacrificed sheep in their tents, while others brought the meat from the slaughter-houses into their tents, and threw the remnants outside. It will, therefore, be necessary, in future, to adopt coercive measures to repress these evils, and the rubbish derived from meat used for culinary purposes and other dirt soever will have to be buried in the ground in the front of the tents.

Although fresh spring water can be brought into Jeddah, yet tank water is that used instead. Some of these tanks are placed at the mouth of a water-course, and get filled by the torrent stream, which brings with it dead animals and filth of every kind. The owners never clean them, so that, in consequence of the late absence of rain, their water has become slimy and filled with worms. The drinking of wholesome water is of primary importance for the preservation of health. It is, therefore, indispensable that these tanks should be cleaned from time to time. Moreover, brackish water is sold at Jeddah for drinking purposes, which, it is needless to add, produces bad effects on the constitution. The cost of bringing fresh water into Jeddah, and distributing it by means of fountains, would amount to about 125,000 piastres, and this ought to be done without further delay.

It has been stated, moreover, that the arrival of the Egyptian General, Ismail Pasha, at Jeddah, was for the purpose of making the survey and estimates required to bring fresh water into that town,

At Yambo, also, there is no running water, but most of the tanks there are placed within the town, and fed by the rain that falls in the streets, so that as the inhabitants have no latrines, and men and women make use of the open streets in lieu of them, the rain water carries their ordure into the tanks, and turns it into a slimy fluid, emitting an intolerable stench, and this beverage is drunk by the pilgrims who pass through Yambo, whether they like it or not. It is superfluous to add how very prejudicial this must be to the public health, and how necessary it is that persons who can afford it should construct latrines in their houses. The inhabitants of Yambo, not being accustomed to such comforts, show no inclination to improve their present habits. The Government ought, therefore, to persuade, and even force them to use latrines, while, at the same time, it should build, at its own expense, those intended for the houses of the poor, or instead establish public latrines in different localities and adopt measures for supplying them with running water.

Much crowding occurs on board of the vessels that carry pilgrims between Suez and the Hedjaz. Ships ought, therefore, not to be allowed to take more passengers than their tonnage capacity will permit, and arrangements ought to be made with the various steam companies to enforce this rule.

Another source of danger to the public health arises from the dense masses of the pilgrims that proceed from Mecca to Medina, as amply shown by the disasters of 1866. Moreover, the collecting provisions at Medina, in the hot season for the journey to Yambo, is a difficult task.

Every pilgrim is obliged to go to Mecca; but it is optional whether he visits or not the shrine of Medina, although the prostration made at the tomb of the prophet is considered highly meritorious.

These two ceremonies are, therefore, independent of one another; and Ahmed Effendi proposes that the pilgrims who arrive early in the Hedjaz should visit Medina first, and thence proceed to Mecca.

Pilgrims coming from Java and the surrounding countries bring with them an offensive kind of dried fish that serves them as food, and which they also sell to others on the way. Nothing on earth (adds Ahmed Effendi) can be compared to the stench emitted by this article of diet, which clearly shows how injurious it must be to the health of those who feed on it. Such, moreover, is the unanimous opinion of all the Hedjaz doctors. It is, therefore, requested that measures be taken through the Hedjaz authorities to hinder the importation of this article, or prohibit its sale.

Dated 27th March 1867.

From—DR. E. D. DICKSON,

To—LORD LYONS, G. C. B.

I have the honor to inform your Excellency that the President of the Board of Health has received a Despatch from the Pasha of Jeddah, announcing the arrival of the first pilgrims from India.

From 21st January to 20th February eighty-two vessels had reached Jeddah, bearing a crew of 1,201 men, and 2,854 passengers,—all in excellent health. Their voyage lasted about three months, during which period five persons had died of old age, and two from inveterate sores.

Dated the 12th March 1867.

From—FUAD PACHA,

To—LORD LYONS, G. C. B.

I have the honor to inform your Excellency that the Sublime Porte has just telegraphed to the Governor-General of Bagdad an order for the immediate despatch to Jeddah of one of the corvettes of the Imperial squadron at Bassorah, in order to look after the maintenance of the sanitary arrangements recently adopted, with the object of preserving the coasts of the Hedjaz from invasion by any epidemic disease.

As it will be necessary, in consequence of the length of the voyage, for the vessel to take in a fresh supply of coals *en route*, I beg your Excellency will be good enough to move the Government of Her Britannic Majesty to give the necessary orders to the Royal authorities at Aden to furnish, against the receipt of the commander of the Imperial steamer, such quantity of coal as may be necessary, either on her voyage to Jeddah or back, for the amount of which the said authorities should draw a bill upon the Imperial ministry of marine.

I beg your Excellency will also be good enough to forward an order by telegraph to Her Majesty's Consul at Bagdad to cause to be obtained for the same corvette the quantity of coal required for a voyage in the Red Sea, the price of which will be paid upon the spot in accordance with orders which have just been given to His Excellency Namick Pasha.

Dated 2nd April 1867.

From—LORD LYONS, G. C. B.,

To—COLONEL STANTON, C. B.

With reference to my Despatch No. 1 of the 1st January last, and to your answer of the 19th of the same month, marked No. 5, I transmit to you herewith copies of three Reports from Dr. Dickson, and copies of instructions given by the Board of Health to members of the Sanitary Commission of the Hedjaz.

I beg you to take these papers into consideration, in connexion with those which were enclosed in the Despatch to you (marked No. 1,) to which I have already referred, and to communicate to me any observations which they may appear to call for. The measures

to which the paper relates are applicable to the pilgrimage of the present year only; and it is probable that next year an endeavour will be made to carry out more completely the recommendations of the Cholera Conference. I am, therefore, particularly anxious to be supplied with information as to the sanitary measures best calculated to guard against the spread of disease, without unduly embarrassing commercial operations, or interfering unnecessarily with the religious observances, or the health and comfort of Her Majesty's Indian subjects.

I may observe that, although the measures already adopted are explicitly stated to be applicable to this season only, I have nevertheless thought it advisable to abstain from committing Her Majesty's Government to any formal approval of them, or consent to them. I have contented myself with allowing the British Delegate to the Board of Health to let them pass without remonstrance and without special amendment.

Her Majesty's Principal Secretary of State informs me that, with regard to the question as to the ports at which pilgrim-ships entering the Red Sea are to be subjected to examination, he is willing to be guided by your opinion. I beg you, therefore, to pay particular attention to the question in drawing up the report for which I have asked you.

I send a copy of the present Despatch to Lord Stanley.

Dated 19th April 1867.

From—COLONEL E. STANTON, C. B.,
To—LORD LYONS, G. C. B.

In reply to Your Excellency's Despatch No. 16 of the 2nd instant, transmitting me copies of two Reports from Dr. Dickson, as well as of instructions given by the Board of Health to Members of the Sanitary Commission at the Hedjaz, I have the honor to submit the following remarks:—

The summary of the Report drawn up by Ahmed Effendi, President of the Hedjaz Sanitary Commission in 1866, which forms one of the enclosures in Your Excellency's Despatch, appears to take into consideration every question connected with the sanitary measures that could reasonably be expected to be taken to guard against the outbreak of epidemic diseases amongst the pilgrims, and the printed instructions given to the Hedjaz Commission of 1866, which are also adopted for the present season, contain directions as to the best method of guarding against the spread of such diseases.

I do not feel myself competent to offer any remarks to your Excellency on these subjects, which are so specially the province of medical men, and which have been adopted after mature consideration by

the Constantinople Board of Health; and, as these instructions appear to have been drawn up with every regard to the religious prejudices of the populations to which they refer, and are confined to measures to be taken during the period of the pilgrimage, they do not, in my opinion, offer any unnecessary embarrassment to commercial operations.

The question of quarantine is, however, my Lord, of more general importance, and requires more consideration as to the manner in which it may affect Her Majesty's Indian subjects.

The Committee, appointed by the Board of Health to draw up rules on the occasion of the present pilgrimage to Mecca, after stating its incompetence to order measures for preventing cholera being imported from India into the Red Sea, determined that a surveillance should be exercised over pilgrim-ships on their arrival at the ports of Mokha, Hodeida, Confuida, Jeddah, Yambo, and Reis, and that those vessels found to be infected with cholera would have to perform quarantine, if possible, at Jeddah.

To these regulations I cannot see that any serious objection can be raised; it has unfortunately been proved that cholera has been imported into Hedjaz by pilgrim-ships arriving from India, and that these ships have frequently been much over-crowded with passengers; the surveillance at the several ports of the Hedjaz, and the quarantine in case of cholera at Jeddah, do not, therefore, appear to be unnecessary precautions under such circumstances. I may, however, here mention to your Excellency that, in consequence of representations made to me last year by the President of the Egyptian Board of Health, that British vessels arrived from India at Jeddah or other ports of the Red Sea without being provided with bills of health, and frequently carrying a greater number of passengers than is allowed by law. I submitted to Her Majesty's Principal Secretary of State for Foreign Affairs, Colucci Bey's suggestions that these pilgrim-ships should be subjected to a visit at Aden, and that the number of passengers on board should be there ascertained, and recorded on the bill of health, so that any attempt to land passengers surreptitiously at ports in the Red Sea would be prevented, or at any rate discovered, on the arrival of the vessel at her destination by a comparison of the actual number on board with the certificate signed by the visiting authority at Aden. These suggestions were approved by Lord Stanley, and I was informed that instructions would forthwith be addressed to the Government of India, in order that the measures suggested by Colucci Bey might at once be carried into effect, so far as they might be found practicable by the Indian Government.

I am unable to inform your Excellency how far these instructions have been carried out, but I believe they would be of great utility in preventing the overcrowding of pilgrim-ships, and so lessening the dangers of an outbreak of cholera amongst the passengers, and the consequent necessity of a rigorous quarantine.

Mr. Vice-Consul Calvert, the British Delegate to the Egyptian Board of Health, has reported to your Excellency the measures adopted

by that Board with a view to prevent the introduction of cholera into this country from the Hedjaz.

They consist of seven days' quarantine at Tor for all vessels arriving from the Hedjaz, not excepting those with clean bills of health. Should cholera break out amongst the passengers during this observation, they will be re-embarked and sent to El-Wedge, there to perform a further quarantine of fifteen days; but should the seven days' quarantine at Tor pass without any case of cholera, the passengers will then be brought to Moses' Well, near Suez, and there perform an additional quarantine of seven days. In the event of cholera existing in the Hedjaz, vessels and passengers will have to perform a quarantine of fifteen days at El-Wedge, after which, if no case of cholera occurs, a further quarantine of seven days' observation at Moses' Well will have to be performed.

These measures may, perhaps, appear to your Excellency as unnecessarily stringent; but, as they do not affect Her Majesty's Indian subjects, or interfere seriously with commerce, I am of opinion that no objection should be raised to them, particularly when the exceptional situation of this country is taken into consideration, as well as the serious annoyances to which the commerce of Egypt is exposed by the vexatious quarantine to which vessels from Alexandria are subjected at Malta and at other parts of the Mediterranean on the slightest suspicion of the existence of cholera in this country.

The ports selected as the quarantine stations appear to me to have been well chosen, and are probably the best that could be procured on the Arabian coast. I would, however, venture to remark, with reference to the site to be selected near the Straits of Bab-el-Mandeb as a quarantine station, that from what I have lately ascertained of the climate of Mussowah, which has been suggested by the Egyptian Board as a quarantine station for vessels entering the Red Sea, that port should not be accepted by Her Majesty's Government as a quarantine station for British vessels, as I have every reason to believe it is totally unfitted for such a purpose.

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 38, OF THE 17TH OF SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirty-eighth meeting at Galata-Serai at noon of the 17th September 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature to His Imperial and Royal Majesty.

Dr. Sotto, Medical Attaché to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d' Affaires.

Dr. Monlau, Member of the Superior Spanish Council of Health.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d' Affaires.

For Prussia:

Dr. Mühlig, Physician to the Prussian Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to the Swedish Legation at Constantinople.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

M. de Lallemand wished to consult the Conference regarding a difference of opinion that arose in the Committee appointed to draw up the minutes which should give an abstract of the labors of the Conference.

It would be remembered, said M. de Lallemand, that the Conference, in one of its recent meetings, proceeded to nominate a Committee to which it gave very explicit directions. It was charged with the preparation of an enunciation, without commentary, of the principal propositions and conclusions of the reports adopted by the Conference, reference being made to the minutes appertaining thereto. As this enunciation was to be a final closing act, it was to be preceded by a prologue and followed by a conclusion or epilogue.

M. de Lallemand, as chairman of that Committee, desired to acquaint the Conference with the difficulties that had been met with in the strict execution of this decision; these difficulties, he believed, could not be overcome except by the Conference itself.

M. de Lallemand proceeded to say:

At its first meeting the Committee had called upon him to prepare the preamble and epilogue of the final act. Between the two the enunciation was to be placed. Each reporter had been told to make an abstract of his report.

At a later meeting, at which six members were present, the Committee found itself in presence of two different projects, each of which obtained three votes.

M. Fauvel declared that a simple enunciation of the principal propositions, and the conclusions of the reports, as had been decided

by the Conference, would, judging from the experiment that had been made, be incomprehensible without an explanatory commentary. He remarked that a simple enunciation without a commentary would be nothing but an *index* which would give but an imperfect idea of the labors of the Conference, and consequently could not be conveniently intercalated in the final act.

M. Monlau, on the other hand, continued M. de Lallemand, had attempted to carry out the plan, proceeding in a different manner. Having devised an analyptic procedure, he commenced by drawing up an explanation of the principal propositions and the conclusions of the reports, which he connected together by extracts from the minutes and reports. His system, it was remarked by some members of the Committee, possessed two inconveniences—in the first place, it took too much time; and in the second, it was calculated to give rise to prolonged discussions. M. Segovia, who had strongly supported M. Monlau's system, did not share this apprehension, considering it to be unfounded.

A third system, added M. de Lallemand, had been proposed, which was to add to the paper he had drawn up, consisting of the prologue and epilogue, the questions and answers as given in the reports adopted by the Conference.

Such was the situation, said M. de Lallemand, and such was the difference of opinion among the members of the Committee. M. de Lallemand begged the Conference to give its attention to the different attempts that had been made, and to decide upon the subject, and then he read the preamble and epilogue he had drawn up.

M. Monlau also read his attempt. It was, he said, only an abstract, a very faithful extract from the report on hygienic measures. He had taken upon himself to draw up this abstract, it having been decided in Committee that each reporter should make an abstract of his own report. He had adhered strictly to the spirit and even the letter of the report, so that his abstract might strictly be placed between the preamble and the conclusion drawn up by M. de Lallemand. This system, in M. Monlau's opinion, could not occasion any discussion, being altogether in conformity with the decision of the Conference.

M. Fauvel made some remarks with the object of displaying the advantages and inconveniences of the different systems that had been tried.

He reminded the Conference, in the first place, that it had decided merely to enunciate the principal propositions and conclusions given in the reports. For his own part, he had attempted to proceed in that way, but without any satisfactory result. He had convinced himself that there were no means of appreciating the exact sense of the conclusions without having the text before their eyes. The simple enunciation of the conclusions and of the propositions would form only a table of contents which would scarcely answer the views of the Conference, or enlighten the public or Governments as to the nature of its labors. For this, an analyptic abstract would be necessary, but it would entail considerable labor, which circumstances did not permit of being undertaken.

M. Monlau had made an attempt at something intermediate. He had made an abstract of his report, by taking detached sentences from it. This incomplete abstract, in M. Fauvel's opinion, could not attain the object. It would be more than an enunciation, and less than a final closing act intended to give a correct idea of the labors of the Conference. Moreover, in M. Fauvel's opinion, M. Monlau's system was calculated to give rise to interminable discussions, to judge merely by the preamble alone, which was open to great dispute.

M. Fauvel thought that, with some slight modifications, the statement drawn up by M. de Lallemand was excellent. To this statement, he thought, *ought to be annexed as a document* a copy of the conclusions adopted by the Conference, with the votes of each member upon them, and a reference to the minutes of the meeting, in which each question was discussed. The object of this statement would not be to give a complete idea of the labors of the Conference; for to do that, it would be indispensible to read both the minutes and the reports: but it would serve as a useful reference.

After these explanations, and a conversation which ensued on the subject between several members, and especially between MM. Salem Bey, Segovia, Goodeve, Fauvel, Monlau, and de Lallemand, His Excellency the President consulted the Conference, and invited it to pronounce its opinion as to the method to be adopted for carrying out the closing act.

After a long discussion, the Conference adopted by a majority of 18 against 2, who declined to vote, (Messrs. Segovia and Monlau) the following formula:—

"The Conference decides that the closing act shall consist of the text read by Count de Lallemand, to which shall be annexed an enunciation of the conclusions adopted by the Conference, with reference to the minutes and votes."

The Conference proceeded to the order of the day, *viz., the discussion of the report upon quarantine measures.*

M. Bartoletti, the reporter, read the report as far as the 2nd chapter.

M. Mühlig asked permission to make a few remarks.

In the first chapter, he said, the Committee had stated the bases upon which it desired to found its quarantine system. Although M. Mühlig differed in some points with the Committee, he would vote in favor of the chapter, but he wished to show the points of difference. The Committee, he thought, should have taken into its serious consideration the objections bearing upon the value and efficacy of quarantines. As these objections showed the *unsafe* points which had to be avoided, they deserved to be regarded with attention. The Committee had not sufficiently appreciated the great difficulty there would be in distinctly specifying diarrhœas, which specification was now considered of great importance. It had confined itself to saying that such cases would be attentively watched, but to what extent was this surveillance

practically possible? There was another point, said the report, which should be taken up: *When need arose,* patients suffering from diarrhœa should be subjected to the same regimen as cholera patients. M. Mühlig thought the expression, *when need arose,* out of place. This diarrhœa, in his opinion, ought always, and not merely in case of necessity, be subjected to the same regimen as confirmed cholera. In connection with this subject he pointed out another incorrect expression in the report. It was said there that diarrhœa was the first manifestation of cholera, while he (M. Mühlig), on the contrary, regarded it as being often the sole manifestation of the disease.

Restrictive measures and means, said M. Mühlig, might be efficacious, if the great difficulties they encountered in practice were duly appreciated and overcome.

M. Monlau believed that the Committee had done well to recommend quarantine measures, but it ought, in his opinion, to have paid more attention to the objections opposed to them, especially those of Griesinger, which were well founded. The Committee, it was true, had mentioned them in its report, but it had not refuted, or given any reply to them. These objections, however, were such as greatly to reduce the value of quarantine measures; and it was for this reason, remarked M. Monlau, that he had laid stress upon measures of hygiene, the concurrence and the action of which were indispensible as much for the prevention of the disease as for checking its progress. The action of hygienic measures was permanent, and their efficacy was general. Griesinger's objections were of great weight; they were real, and the Conference should not overlook them. At the same time, however, practical difficulties or inconveniences ought not to divert their minds from the quarantine system. But in order to make quarantines efficient, it was necessary that they should be well carried out, which was very difficult, and it was necessary to reinforce them by hygienic measures; then only, it should be distinctly understood, could they be useful, spite of the difficulties met with in their application.

M. Monlau added that the report should have caused it to be understood that the edifice of a new system of prophylaxy was based upon the principles admitted by the Conference regarding the transmissibility of cholera; and by these principles it was laid down that the disease must be opposed in its cradle. But all that, in his opinion, should be given forth with reserve, for what was admitted now might not always be admitted. The doctrine of transmissibility, proclaimed by the Conference, was not yet the universal doctrine, and the ideas which had till recently been current had not yet been altogether abandoned. These ideas might again predominate some day or other, and might be maintained by some school.

M. Sawas was not of this opinion. He believed, on the contrary, that the Committee had sufficiently refuted the objections of Griesinger and others. But it had agreed with itself, and with the principles laid down by the Conference, which had passed over these objections; for it

could not have accepted them without sapping the bases of its quarantine system, which system was based upon the certainty of quarantines being efficacious. It might be added, said M. Sawas, that M. Mühlig and M. Monlau had both stated that the objections were not such as to cause the abandonment of the quarantine system. This, he thought, was the best refutation that could be given to these objections.

The Committee, said M. Sawas, had been faithful to the bases fixed by the Conference. Discussion consequently not being possible, he proposed that the first chapter should be put to the vote.

M. Fauvel remarked that the questions concerning the bases of the quarantine system had been lengthily discussed on other occasions, and the Conference had given very categorical opinions upon the point. There was no occasion for the Committee to take up M. Griesinger's opinions in its report, whatever M. Monlau might say. M. Fauvel understood very clearly that M. Mühlig wished to go back to them. He had from the beginning professed an opinion contrary to that of the majority, relative to the duration of choleraic diarrhœa, and he wished to put it prominently forward on every occasion. M. Fauvel did not dispute the difficulty there was in always discovering the existence of cases of diarrhœa on board a ship; but he believed that cases of this kind, which could be concealed, were not so dangerous as one would be tempted to suppose, if pratique were not allowed until after all necessary precautions had been taken. In the first place, these cases of diarrhœa made their appearance generally during the first few days of the voyage, and they as generally were either rapidly cured, or resulted in confirmed cholera; and, admitting that a stray case of tardy diarrhœa would escape search, the chance that such a case would propagate cholera would be very greatly reduced, if all other chances of contagion had been suppressed. Unfortunately, absolute efficacy could never be imparted to any quarantine system, because in actual practice chances of contagion could never be absolutely avoided altogether. But by the adoption of suitable precautions, the chances of infection might be reduced to a minimum, which would give large guarantees of efficacy. The possibility of choleraic diarrhœa escaping careful search would, no doubt, remain as a very rare chance of infection, and it was to be wished that there were no others, for then there would be very few risks to run.

M. Fauvel, moreover, was of opinion that on board ships where there was a sanitary physician, it was not such a difficult matter as was supposed to ascertain the existence of diarrhœa.

M. Sotto mentioned, with reference to the German authors noticed in the report, a circumstance which had not been taken into consideration. Mention was made in the report of the Bavarian Commission, of which M. Pettenkofer himself was a member. But the report of this Commission was dated in 1854. Now, M. Sotto believed that since that time the German physicians composing the Bavarian Commission had acquired from experience many facts which they had not had the advantage of possessing at that period, which must have led them to modify their opinions considerably regarding the system of quarantines. This

supposition, in his opinion, was well founded, since in 1866 in a memoir published by the German authorities, among whom was M. Pettenkofer, it was demonstrated that they had modified their opinions on many points. M. Sotto firmly believed that at the present day restrictive measures were looked upon in a light very different from that in which they were regarded in 1854, and that they were almost in conformity with the views of the Conference.

Dr. Goodeve wanted some explanations regarding an expression used in the report, where it was said that *the populations of Eastern countries were scattered.* He thought it was necessary to state what Eastern countries were meant, for there were vast countries in the East which were very thickly, and not sparsely, peopled.

Dr. Goodeve also maintained a reserve regarding the paragraph in page 7, where it was said that the data collected by the Committee on the 3rd group proved that the balance was all in favor of the system of quarantines.

M. Bartoletti remarked to Dr. Goodeve that the sentence following that in which the scattered populations of the East were alluded to sufficiently showed what Eastern countries were meant. By the East was meant Turkey and the parts about the Asiatic frontiers of Europe.

M. Monlau remarked to M. Sawas that it was true that the objections against the quarantine system were not such as to cause its abandonment, but still it was proved that they were such as to impose redoubled surveillance and strictness. If it was not possible to reach the absolute, as had been well remarked by M. Fauvel, an endeavour must be made to approach it as much as possible; every effort must tend towards that object. M. Monlau was also of opinion that the dangers resulting from sanitary evasion, of which M. Fauvel had just spoken, were immense, and that this evasion was much more to be dreaded than commercial smuggling, which could merely cause material damage, while the former might cause the loss of a whole country.

M. Mühlig said that he had only maintained the difficulty of ascertaining the existence of diarrhœas to point out the dangers that had to be avoided in the system. This difficulty had been admitted by M. Fauvel himself, who only differed with him (M. Mühlig) in opinion as to the dgeree of danger that might result from it.

M. Sawas confessed that he did not see any great difference between the various opinions expressed, and he believed that the same spirit prevailed in all. As to sanitary cordons, his conviction was that they were more efficacious in Europe than in the East. This opinion must, to more than one, appear paradoxical, but it was based upon the following considerations :—

1*st.*—In Europe boundaries were well defined, and it was possible to keep them isolated. Moreover, correct knowledge existed of all routes and passages;

2*nd.*—There were special authorities and special institutions of every sort for the frontiers;

3*rd*.—Employés were accustomed to do their duty, and they knew how to do it;

4*th*.—The people specially were civilized, and consequently trained to obedience to the laws. They sought their safety only in carrying out the prescriptions of those who governed them.

In the East, on the other hand,—

1*st*.—There was a complete ignorance of roads, defiles, paths, &c., and boundaries were ill-defined;

2*nd*.—There was an absence of frontier institutions, and there were hardly any frontier authorities;

3*rd*.—Employés were recruited at hazard: they were all, to say the least, novices at their work.

4*th*.—Finally, frontiers were constantly passed at a hundred different points by populations which, during the greater part of the year, were floating and nomadic. These people submitted to nothing but material force, and paid not the least respect to civil or sanitary laws; on the contrary, they did everything they could to violate them.

M. Maccas considered that most of the objections urged against the report had been refuted: he, therefore, did not mean to enter into any detail regarding them. He thought it necessary, however, to say a few words about the remark—a very just one in other respects—made by M. Sotto regarding German authors. The Bavarian report was dated in 1857; if since then German opinion against quarantines had been modified, it could not have been so to such an extent as M. Sotto believed. Hostility to the quarantine system still continued, and the ideas expressed in the Bavarian report still prevailed. They were followed by Griesinger and Pettenkofer, who thought that quarantines, to be of any use, ought to last for at least four weeks.

The opinions of those, said M. Maccas, who were opposed to the system of quarantine, had been taken into serious consideration by the Committee, which had felt that they could not be neglected. The Committee also had recognized, as well as M. Mühlig, the difficulty of ascertaining the existence of diarrhœas, and further on in the report, it would be seen by what means success—at least as much success as was possible—would be attained in ascertaining the existence of diarrhœa. M. Maccas concluded by saying that the Committee had, therefore, foreseen the difficulty, and suggested the means of overcoming it.

M. Bosi said that he would wish, where it was suggested (in the 2nd part of the conclusion) to establish quarantines in accordance with the principles now admitted regarding the transmissibility of cholera and its mode of propagation, the words "*by the Conference*" to be added after the word "admitted," or the word "now" to be struck out. These principles, said M. Bosi, did not date from the present day merely; they had been proclaimed by Betti and Rosemburg at the first Conference of Paris. This theory, which they admitted in different

terms, had only gained ground. Many physicians upheld it in Italy and elsewhere. The only difference was that this theory, which till lately had belonged to the minority only, was now upheld by the majority of physicians.

M. Sotto was of opinion that, to state correctly in what the opinions of the present day differed from those of 1857, it was necessary to compare point by point the experiments of the present day with those of that period. In doing this, it would be found that remarkable changes had been adopted in many points. In regard to quarantines, said M. Sotto, the German authors were quite right to require that they should last for four weeks, inasmuch as the duration of diarrhœa was some times very long. This showed, however, that the German authors were commencing to believe in the efficacy of the quarantine system. They only required that it should be of what they considered the necessary duration. There was, therefore, a change in their ideas since the publication of the Bavarian report.

M. Maccas insisted upon the point that the German physicians, who had been the first to express the ideas now current, relative to the transmissibility of cholera, and with reference to which they had undertaken studies of the greatest importance, which now served as the base of the labors of the Conference, had not modified, in any salient manner, their ideas regarding the value of the quarantine system. It was on this point alone that he differed in opinion with M. Sotto, but he admitted with him there had been, even in Germany, a change of opinion on many other points since the date of the Bavarian report.

M. Bartoletti thought that the reasoning of M. Mühlig, as well as that of M. Monlau, would lead to the negation of quarantines. But was it enough, he would ask, to invoke against quarantines merely the difficulty of ascertaining the presence of diarrhœa? Would not the abolition of all quarantine systems result inevitably in favoring the propagation of cholera?

At the request of several Delegates, His Excellency the President put to the vote the 3rd part of the 1st chapter.

It was adopted unanimously, with the exception of Dr. Goodeve's reservation touching the balance of the advantages and disadvantages of quarantines.

M. Bartoletti read the 2nd chapter.

M. Mühlig said that in that chapter two very distinct kinds of facts were mentioned, which had not been sufficiently distinguished in the report. The conclusion was based on two sorts of sanitary cordons, but in the text the necessary details were not given to establish properly the difference existing between these two kinds. Yet the distinction of the cordon into two kinds was, in the point of view of the efficacy and the danger, of the greatest importance. When a cordon was set up for a population already infected, the disadvantages and the dangers were much greater and much more to be dreaded than when a cordon was established for an uncontaminated population desiring

to preserve itself from a choleraic invasion. In the first case, the furnishing of supplies being very difficult, serious risks of scarcity were incurred, to avoid which the persons within the cordon were very much disposed to take to flight, and they had an incessant tendency to break bounds. This species of cordon was, therefore, in his opinion, the least to be recommended, and the least efficacious; while the cordon, the object of which was the preservation of an uninfected population, being easy of application, the inhabitants themselves willingly assisted in establishing and maintaining it: and bounds being scarcely ever broken, it was also most efficacious. M. Mühlig thought it necessary, therefore, to lay great stress upon the difference between these two kinds of cordons, and to show that the defensive cordon was a great deal more efficacious and less dangerous than the other. During the epidemic in the Grand Duchy of Mecklenburg-Schwerin in 1859, about ninety or a hundred uncontaminated localities were isolated by cordons and maintained themselves uninfected. Only nine or ten of them were attacked in spite of this measure. It must be added, nevertheless, that many places remained untainted, notwithstanding their frequent communications with infected places.

M. Bartoletti considered that the distinction on which M. Mühlig had laid so much weight was a pure subtlety. This distinction was anything but practical, and M. Bartoletti was firmly convinced that both kinds of cordons were equally useful and efficacious.

M. Sotto said that reading the text, one remained persuaded that the Committee, by wishing to prove too much, had proved nothing. M. Sotto alluded to what was said regarding Russia. If the figures of the report were admitted, the conclusion would be arrived at that cordons had been established throughout the immense Russian Empire. Could that, he would ask, be accepted as a real fact? Was it merely owing to cordons that cholera had spared many provinces and had lost its strength in Russia? and was it not more natural to attribute its diminution to other causes? M. Sotto did not deny the utility of cordons; he admitted their efficacy, but he believed that they could not be properly established, except in thinly populated countries. In Austria, he said, they had resulted badly. When a cordon was established in Gallicia, which did no good, the scourge passed through the province. The cordon was also set up on the frontiers of Hungary, and two weeks afterwards cholera had not only passed it, but reached Vienna. The efficacy of the cordon then depended upon many conditions, among others those he had specified. These conditions, he thought, could never be met with in Russia, so that cordons established in the Russian Empire could only favor the propagation of the disease.

M. Bartoletti pointed out to M. Sotto that what he had just said had been clearly established in the report. In the conclusion of the 2nd chapter, it was said that sanitary cordons employed in the midst of a thick and numerous population were uncertain in effect and often dangerous; that, on the other hand, employed in limited localities, or in thinly peopled countries, cordons were destined to render great services, &c.

M. Bosi was also of opinion that M. Mühlig's distinction was merely turning in a circle a play of words. Generally, he said, cordons were not established in countries that were attacked, but only in those which were yet uninfected, with the object of preventing the penetration of the disease. M. Bosi believed that, in reality, only one species of cordon existed. He admitted, however, that this cordon might be more or less efficacious. Now the Committee had not failed to point out what were the requisite conditions for its success.

M. Mühlig expressed his surprise to hear a most important distinction qualified as a subtlety and a play upon words. He considered that this distinction was indispensable, for the cordon established around an infected locality would always be of doubtful efficacy, since the population, a prey to terror, would wish to seek safety in flight, and would violate the cordon; while an uninfected population, which would itself establish the cordon from fear of a choleraic invasion, would know how to respect it, and make it respected. In the latter case, a cordon would be a perfect guarantee of security, as was proved by experience.

M. Bykow, in support of M. Sotto, stated that what he had said regarding Russia was very true. The inefficacy of cordons having been discovered in Russia, they were abolished shortly after their establishment. Nevertheless, they had been very useful in some places in the Governments of Orenburg and Astrakhan, where the population was scanty, and where towns, villages, and forts were generally very far apart and separated by almost desert tracts.

M. Bykow added that he could cite other instances, in addition to those given in the report, to prove that cordons had sometimes been very efficacious. M. Bykow thought that if the statistics prepared by M. de Rosemburg did not incontestibly prove that it was owing to the sanitary cordons that the epidemics of 1829 to 1831 had been less murderous than those of 1847-49, they at least gave rise to the presumption that the cordons had been very useful.

The fact relative to Karaqnala, M. Bykow said, he had also extracted from Lichtenstadt.

M. de Lallemand admitted the correctness of the remarks just made by M. Bykow regarding the value of sanitary cordons in Russia.

M. Monlau thought the conclusion of this chapter imperfect. In his opinion it only enunciated a generality, and neglected the question which it was important to solve. This question consisted in the manner of applying the cordons, the cases in which their application was necessary, and whether they should be applied by themselves, or in connection with lazarettos. In Spain, said M. Monlau, cordons had been abolished thirty years ago, notwithstanding which there had always been populations by whom they had been voluntarily established, but not without opposition. At the present moment of speaking, a sanitary cordon existed at Majorca. The nature of a sanitary cordon must be distinctly understood, for many persons persisted in thinking that a sanitary cordon was always a military cordon. As there were three species of cordons, the

least efficacious of which had always been the, so to speak, living cordon, it was very requisite to consider them in all points of view, and to specify the qualities inherent in each. This was indispensible to the determination of how, and in what circumstances, they ought to be applied. M. Monlau reminded the Conference that he had already had occasion to speak against half measures.

M. Fauvel was of opinion that the distinction upon which M. Mühlig had laid stress was of some value in the point of view of efficacy; but he believed, nevertheless, that what the Committee had said regarding cordons was important. M. Fauvel deduced, from what had been said by M. Monlau, that he was, to a certain point, in favor of sanitary cordons, and that he had had considerable experience of them. However that might be, it did not follow, from what he had said regarding these cordons as they existed in Spain, that they had any advantageous result. The last epidemic, in effect, in spite of the cordons voluntarily established at certain places, had, nevertheless, invaded almost every province. In countries where the fear of cholera was extreme, and where, while some sought safety in flight from the infected places, others endeavored to prevent the irruption of these fugitives, the establishment of sanitary cordons might occasion dangerous collisions. Definitively, the utility of sanitary cordons was limited to certain conditions specified in the report. As for the opinion expressed by M. Sawas, who believed that sanitary cordons would be more efficacious in Europe than in the East, it was, in fact, as he had said, a paradox which it was needless to refute. The occasions in Europe when a sanitary cordon might be applied with efficacy were in reality very rare, while it was not so with regard to certain countries in the East. Thus, to mention only the Turco-Persian frontier, the passage of the Kurds from the one territory to the other had not the dangerous consequences attributed to it by M. Sawas. In reality, the Kurds, though they changed their valleys in accordance with the necessities of their herds, did not change their countries; they did not travel; they stayed in their mountains; and this was why cholera, which was now prevailing among them, and which had been so prevailing for a year past, had no tendency to spread in the neighbouring provinces. The Kurds then were not an insurmountable obstacle to the establishment of a sanitary cordon in that direction, the conditions indicated in the Report being observed.

M. Maccas did not deny the importance of the distinction sought to be established between cordons; this distinction existed, and the report had pointed it out. But the report, while it indicated the different species of cordons, had not sought to lay stress upon the fact that the object of the cordon was to guarantee the preservation of a whole country. The Committee had believed that the other kinds of cordons could not but be of extremely restricted application. M. Maccas did not share the fear expressed by M. Mühlig. A scarcity, in his opinion, would scarcely be possible, for it would be enough to make the necessary arrangements for the supply of provisions to the enclosed country.

M. Sawas believed that M. Fauvel had not properly understood him, and had converted a general into a particular question. M. Sawas

declared that he had no intention of putting into the balance the advantages and the disadvantages special to Europe and the East in the matter of cordons. He had only set up a question of possibility, application, and facility; and if M. Fauvel wished to dispute his opinion, it was necessary that he should prove generally that every measure, every law, was easier of application in a barbarous than in a civilised country. M. Sawas being convinced of the contrary, maintained that the most salutary measures were treated with contemptuous negligence by people who were not accustomed, by a long course of education, to respect the laws. As for the Turco-Persian frontier, continued M. Sawas, M. Fauvel had pleaded the cause of the cordons. Compelled to leave this part of the speech of his honorable colleague unanswered, he ought to refrain from pleading against it. He had imposed upon himself, as a rule, not to descend into the details of this question, which might be disagreeable, and which he considered to be beyond the competence of the Conference.

M. Bartoletti thought himself bound to state that the chapter under discussion did not treat the question of cordons thoroughly. The Committee did not care, in this chapter, to enter into all details, because the same question was discussed in other chapters.

M. Bartoletti thought, in spite of everything that had been said, that M. Mühlig had attached too much importance to the distinction between cordons.

The President put to the vote the 2nd article of the 2nd chapter. It was adopted unanimously, with the exception of Dr. Goodeve, who refrained from voting.

The meeting terminated at 4 P. M.

Order of the day for the next meeting.

Continuation of the discussion of the Report.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE.

[ANNEXURE TO MINUTE No. 38.]

REPORT ON THE QUARANTINE MEASURES APPLICABLE TO CHOLERAIC ARRIVALS.

Submitted by a Committee consisting of H. E. Salih Effendi, *President;* M. Stenersen, *Vice-President;* Count de Noidans, Chevalier de Soveral, *Diplomatists;* and Dr. Bartoletti, Dr. Dickson, Dr. Baron Hübsch, *Secretaries;* Dr. Maccas, Dr. Pelikan, Dr. Salvatori, and Dr. Sawas Effendi, *Physicians.*

DR. BARTOLETTI, *Reporter.*

GENTLEMEN,—We have reached one of the practical portions of our task, the consideration of prophylactic regimen against the invasion of

Asiatic cholera. In the development of the work the Committee has the honor to submit to you, and which comprises all the quarantine measures applicable to choleraic arrivals, it has made it a point to adhere, as closely as possible, to the spirit and the letter of the principles adopted by the Conference regarding the transmissibility of cholera and its mode of propagation. In taking for its guide the conclusions of the *General Report*, and the questions of the programme for its starting point, with a few additions that were deemed necessary, the Committee believes that it has acted in conformity with the views of the Conference.

Making allowance for the difference of opinion that existed upon some of the points discussed, and which we shall not omit to notice in the course of the report, most of the conclusions we have arrived at were adopted unanimously by the Committee.

Among the questions which were assigned to us, and which it is our duty to analyse and solve there are some which have been treated of by the Committees on the other groups of the programme. We think there is no necessity to enlarge upon these. We shall content ourselves by simply touching upon them so far as shall appear necessary to complete the order of the measures in general, the object to be attained being, in our opinion, to elucidate the subject without encumbering the discussions of the Conference with materials.

This being so, we divide our work into five parts or chapters, in which we successively enter upon the questions of restrictive measures in general, sanitary cordons and isolation, quarantine establishments or lazarettos, the regimen applicable to choleraic arrivals and disinfection, and lastly the bill of health and survey and search.

CHAPTER I.

GENERAL CONSIDERATIONS REGARDING THE QUESTION OF RESTRICTIVE MEASURES.

I.

What are the lessons of experience with regard to the quarantine systems hitherto in force against cholera? Is there ground to hope for success from quarantines established upon other bases? What are the fundamental principles deduced from experience which ought to guide us in this question?

There was a time, and not very long ago, when scientific opinions differed greatly regarding the transmission of cholera. Individual men of great merit, academic bodies, and, following in their footsteps, enlightened Governments, attached themselves to the idea that cholera was transmitted by the air to great distances without the coöperation of sick men or contaminated objects. This was the most widely-spread and the most accredited opinion. On the other

hand, a considerable number of learned men holding a contrary doctrine, *viz.*, that of the transmission of cholera by man, sought in vain to make their opinion prevail, because, being for the most part imbued with the principles of absolute contagionism, they applied all their efforts to the resuscitation of ancient practices which had fallen into desuetude and which had formerly been applied against the plague. It was evident that each of these systems had its weak side. Experience not being as yet sufficiently decisive, and the two camps making mutual concessions to satisfy the exigencies of the period, the result was a transaction, sanctioned, in a manner, by the act of the Conference of 1852, which in reality was neither a very serious quarantine, nor yet free pratique pure and simple. From such a system no light could be thrown upon a question so obscure and so difficult of solution. What, indeed, could be expected from a quarantine of three or five days, most frequently including the days passed on the voyage, no reckoning being made of the period of incubation, of the premonitory diarrhœa, of contaminated articles, or linen soiled with dejecta,—all of which are conditions by which at the present day the transmissibility of cholera is determined? Similarly with the greater number of the lazarettos; these establishments, situated upon badly chosen ground attached to towns, constructed like barracks or gaols, often crowded, and with a confined and unwholesome atmosphere, were generally more apt to communicate cholera to the population in the neighbourhood than to save the people from its attacks. We can cite as instances the lazarettos of Beyrout, the Dardanelles, Ancona, and many others. What lesson could be learnt from all this, but the inefficacy of such agents to prevent the transmission of cholera from an infected to a healthy country.

It is true that, since the first appearance of cholera in 1830, severe quarantines have been established, and sanitary cordons organized upon a vast scale, in Russia, Prussia, and elsewhere in Central Europe, to avert an epidemic; but these measures, undertaken in the midst of thickly peopled countries, the inhabitants of which possessed only a vague knowledge of the disease with which they had to deal, either failed, or had only negative results. It is even probable that the cordons contributed to disseminate the evil against which they were intended to act. Between 1847 and 1850 Sweden made a still more sustained effort than the other States of Northern Europe in order to save herself; but on this occasion too cholera passed the very costly barriers erected against its progress.

Such systems, powerless to stop cholera in its invading march, brought discredit upon quarantines in the eyes of a great number of civilised people, and led to a belief, for a long time, in the diffusion of cholera by means of the air and the inutility of restrictive measures. With reference to these quarantines, we quote here the opinion of an author of repute in cholera matters:—"It is unjust," says Greisinger, "to draw a conclusion from these first attempts, for at that time "isolation and separation were very frequently not applied until the

"disease had already been introduced into the country, or after the "appearance of the premonitory symptoms of diarrhœa." To these words of the German *savant*, can we not add that the men forming the cordons have been the first attacked, and, as has often been seen since, have served as vehicles for the wider propagation of the disease? Recently, was it not in this way that the outer sentries of the Dardanelles lazaretto communicated cholera to the population of the town?

The Committee, therefore, is of opinion *that the lessons to be drawn from the experience of this primary period of quarantines have no conclusive value.*

Some of the attempts that were made, however, resulted in a substantial success. Before we come to the epidemic of 1865, which offers numerous instances of preservation by means of quarantines, we shall mention the circumstance of Mecklenburg in 1859, which caused Niemayer to say that the general conviction formed from the times of the first epidemics of cholera as to the inefficiency of quarantines in preserving a country was altogether *erroneous*. But Greece, above all countries, profited by a very strict quarantine system. By a complete isolation of choleraic arrivals on uninhabited islands, that country altogether escaped the epidemics that have in succession ravaged Europe since 1831. Once only was Greece, whose peculiar shape enables her to isolate herself completely, invaded by the scourge, and she owed the invasion to the exceptional circumstances by which she was prevented from imposing her usual severe system,—it was in 1854, when the Piræus was occupied by foreign forces.

But it is in the epidemic of 1865 that we find proofs, as numerous as they are conclusive, of the efficacious action of quarantines. In Greece, twelve times in the space of two months was cholera imported into the lazarettos of Delos and Skiathos, and as often was it extinguished there. Crete obtained the same success twice in one month by strict isolation on two islets. The island of Volo was saved by means of a quarantine established upon a desert isle where cholera, which was imported there twice, raged among the persons in quarantine. New York gave the striking proof of three abortive importations, thanks to intelligent measures of isolation. We might multiply examples, but it would be needless, for they are to be met with in great numbers in the historical précis of the epidemic submitted to the Conference.

The Committee concludes, in accordance with these facts, *that it is incontestible that quarantines established upon rational bases and in conformity with the progress of science may serve as efficacious barriers against an invasion of cholera.*

But what are the bases upon which we ought to build the superstructure of a new system of prophilaxy? We must look for our standpoints in the experience of the various epidemics, and especially in that of 1865, as well as in the conclusions adopted by the Conference with respect to the question of transmissibility. Cholera, says the Conference, is

transmitted by diseased man, by choleraic *excreta*, by contaminated effects, by soiled linen,—its principal vehicle is the atmosphere. The period of incubation, it also says, scarcely ever exceeds a few days, seven at the most, and choleraic diarrhœa is of every short duration. We should have contented ourselves with simply indicating these principles here, principles which form the corner-stone of the system we are about to propose in separate chapters, but we deem it useful to place them, at starting, in opposition to certain objections which have been raised, not by the opponents of transmissibility, but by its most judicious defenders.

In fact, at the present day, the transmissibility of cholera is opposed by only a weak minority, with which we need not concern ourselves here. But not so with regard to the efficient action of restrictive measures in arresting the propagation of cholera. In this point of view we find ourselves opposed by adversaries of great authority, with whom it is necessary to deal. The Bavarian Commission expresses itself thus in one of the conclusions of its report on the cholera of 1854:—"Measures "with the object of preventing the importation of cholera into a coun- "try yet uninfected, or of stopping its extension in a place already "attacked, by means of the interruption of communications and isolation, "are inefficacious, impossible of execution, and injurious." Griesinger "says also, that:—"Military cordons intended to isolate an entire coun- "try are illusory; that choleraic diarrhœa, by means of which import- "ation is generally effected, cannot be prevented by restrictive "measures; that the period of incubation is sometimes long; that "probably Europe will never come to an agreement for the adoption of "equal measures everywhere; and that, lastly, the great interests of "commerce will always induce people to elude the restrictions imposed "upon them, and that consequently quarantines, even in seaports, are "of very little use."

Here it will be seen we have two very different kinds of objections: the first direct, and touching at the very essence of the question, for they are based upon the length of incubation and upon choleraic diarrhœa; the others, indirect and secondary, relate to the inefficacy of cordons, the disagreement of Governments, and the interests of commerce. Not to lay too much stress upon the matter, we would call attention, as to the first point, to the principle of the short duration of incubation and to the exclusion of the exceptionally rare facts of a prolonged incubation, complex facts, and consequently of very doubtful value. (*Chapter XIII of the General Report.*) We find it, in fact, to be wiser to adhere to the results of continuous and general observation than to base our deductions upon unfrequent and uncertain facts. We might say as much for choleraic diarrhœa, which, according to the opinion of the Conference, is also of short duration, never exceeding a few days. Hitherto neglected in the point of view of restrictive measures, choleraic (what is called premonitory) diarrhœa will, in the new order of things, be as attentively watched, and when necessary, subjected to the same regimen, as the disease itself, of which it is, in point of fact, the first manifestation.

We shall have to return to these questions again ; for the present, let us pass on to the objections of the second kind. We have already expressed our opinion regarding the inefficacy of military cordons, such as they have practically been hitherto. We admit that even now these cordons would offer no substantial guarantees if they were applied upon a great extent of territory, in the countries of Central Europe which are so thickly peopled, and where the communications are so multiplied and varied ; but we believe that in opposite conditions, in the East for instance, and towards the Asiatic frontiers of Europe, cordons are not only possible but necessary, as we shall see presently.

Another objection, more apparent indeed than real, is that of the impediments thrown in the way of commerce by quarantines. No doubt quarantines are not made to accelerate commercial transactions, and commerce loses something by them. But this is not the question. The question is contained entirely in the terms of Article 20 of the programme : *If, on the one hand, we weigh the inconvenience caused to commerce and international relations by restrictive measures, and, on the other, the obstruction occasioned to trade and commercial operations by an invasion of cholera, to which side, is it supposed, would the balance incline?* This important question having been discussed by another Committee, we will not undertake to repeat its arguments, but we will remark generally that the balance is wholly in favor of quarantines, and we give here briefly the principal reasons why it is so.

The losses which would be occasioned to the material interests of people by the restrictive system of quarantines have been singularly exaggerated. It has been said that commerce would be completely ruined, trade would be annihilated, labor suspended to the prejudice of the masses, and that many other evils, more serious than those resulting from an epidemic of cholera, would weigh upon people. All these assertions are vague and unfounded. On the contrary, the information collected by the Committee on the 3rd group proves that the balance is altogether in favor of the system of quarantines.

We admit that, if quarantines were to be established in accordance with the errors of the past, and if, heedless of the lessons taught by experience, we were to re-establish those permanent cordons and those lazarettos of the middle ages which systematically separated the East from the West, we admit, we say, that quarantines applied in this way to all countries would seriously affect the interests of the whole world. It is even probable that the most inveterate opponents of quarantines are so in fact only because they dread such a retrogression. But there need be not the slightest apprehension of this. The system we propose is based upon data determined by science which do away with that blind and condemned routine.

The bases of this system are deduced from the programme. They may be divided into two series of measures,—*first*, to find the means of preventing the importation of cholera from the direction of India ; to isolate it in the Hedjaz when it develops itself there after the pilgrimage ; to adopt special measures when it appears in Egypt ; to prohibit emigration from contaminated places ; to interrupt the communications

between an infected spot and the surrounding countries; in a word, so to act as to apply restrictive measures, as close as possible to the primitive and initial foci of the epidemic. *Secondly*, to establish completely isolated lazarettos; to determine the duration of the quarantine according to the duration of the incubation of the disease and without losing sight of the premonitory diarrhœa; to subject ships, clothes, and linen to disinfection by washing, ventilation, and such chemical processes as are reputed to be most efficacious; not to subject merchandise, save in exceptional cases, to purification; to give credit to ships for the duration of their passage, by means of a series of measures applicable to their start and the voyage, so as to shorten, within limits compatible with public security, the duration of quarantine on arrival. In other words, the bases of the new prophylactic system would, according to the Committee, consist—1*st*, *in combating the germs of the disease in its original foci before they disseminate and propagate themselves abroad*; 2*nd*, *in the establishment of quarantines in accordance with the admitted principles of the present day regarding the transmissibitity of cholera and its mode of propagation.*

It is evident, from this explanation, that the tax upon commerce, and the losses to trade occasioned by restrictive measures, are infinitely small if they are compared with the ruinous effects of emigration, the cessation of labor, and the absolute stagnation of affairs which are inseparable from a great epidemic, as was seen by the afflicting spectacle presented in 1865 by Alexandria, Marseilles, and Constantinople. We shall proceed no further with these generalities. We state simply that such at the present day is the almost unanimous opinion of Governments and people, whose concurrence as to the necessity of restrictive measures seems to us to be a decisive reply to M. Griesinger's last objection.

CHAPTER II.

Of Sanitary Cordons, Isolation, and the Interruption and Restriction of Communications.

Sanitary cordons, the isolation of foci, the interruption and restriction of communications are so many different measures, in certain respects, but which, according to the case, are summed up, in one single measure, because they concur altogether to form what is called the isolation of a locality or country. We are about to examine them all in the same chapter, allowing, at the same time, for the difference proper to each of them in particular.

II.—Sanitary Cordons.—What is the degree of utility of these Cordons? In what conditions are they applicable, and how they are to be applied?

The object of cordons, formed by a line of troops or detachments posted at certain distances from each other, is to isolate a country and to

intercept its communications, so as to prevent the propagation of an epidemic. Experience has proved that the utility of cordons depends upon the extension given to them, and the manner of their application. The attempt made in 1831 failed, as we have said, because the cordons were applied upon a great scale in populous countries having but vague notions regarding the mode of transmission of cholera. Too close to the foci not to be exposed to choleraic contamination, the military who composed the cordons were attacked, and became the means of disseminating the disease. It has even been asserted that, in Prussia, the cordons were not established until the disease had already penetrated into the country; and more than that, it is certain that, at that time, attention was entirely directed to the confirmed disease, no regard being paid to choleraic diarrhœa as a propagating agent. Now it is evident that, under such conditions, cordons become more dangerous than useful.

It would be altogether otherwise if cordons were established in contrary conditions; if the population of the country in which they were to work was thin and scattered; if the ground, by its formation and other circumstances, were adapted to facilitate surveillance; if the men forming the cordon, placed at a convenient distance from the focus, were themselves not exposed to contamination; if the sanitary authorities attached to the premonitory diarrhœa the importance it possesses in the point of view of the transmissibility of the disease; in a word, if all the rules of isolation were scrupulously observed, so as to produce a vacant space around a choleraic focus.

Facts are not wanting in the annals of cholera (1830-31) to prove the efficacy of cordons applied in restricted proportions, to encircle the localities attacked as well as to preserve others not yet touched. We meet with these instances chiefly in Russia. Forts and villages in the Governments of Orenburg and Astrakhan were preserved by the timely employment and rigorous observance of cordons. It was in this way that the estates of MM. Smirnow, Beketow, and Dolgorouky escaped the epidemic, which raged in their environs. And similarly with the town of Sarepta, situated twenty-six kilomètres from Tsaritsin, where cholera was raging. *(Observations of Dr. Solomon, published by the Medical Board of St. Petersburg.)* In the same way were preserved, in 1831, Peterhoff, Tsarskoe-selo, Pavlovsk, and the island of Elaguine, places of recreation around St. Petersburg, which was being ravaged by the epidemic. It is even to be remarked that the island of Elaguine was attacked by the disease after the abolition of the cordons. *(Lichtenstadt. Du Choléra en Russie* 1830-31.) The military governor of Orenburg mentions the following fact in support of the efficacy of cordons. A violent epidemic raged in 1829 in the Tartar village of Karamala (41 attacks and 20 deaths in ten days in a population of 145 persons). A neighboring village, 85 mètres from the former, and inhabited by Russian peasants, was saved by strict isolation, applied immediately on the appearance of the disease at Karamala. It appears from a statistical paper, submitted to the Russian ministry of the interior by Dr. Rosenberger, that from 1847 to 1849 the deaths from

cholera in the Russian Empire exceeded the number of one million, and that the number of towns attacked was 471. Now at that time the communications between infected and healthy places were open. On the other hand, in the first invasions, from 1829 to 1835, when the progress of cholera was interrupted by sanitary cordons, the number of deaths did not exceed two hundred and ninety thousand, and there were only 336 towns attacked. Does not this difference, the epidemic on both occasions being equally violent, seem to be explained by the action of restrictive measures and cordons? *(Extracted from an official communication made by M. Pelikan).*

Lately (1866) the small town of Tiberiad in Palestine was tried by the epidemic. It lost more than a hundred out of three thousand inhabitants. Being situated in conditions rendering isolation easy, it was encircled by a cordon, and the cholera died away there without spreading to any other place in Syria.

Almost at the same time cholera raged at Nejef and Kerbela. One of the eight small forts existing on the skirts of the desert to restrain the incursions of the Bedouins, was infected. It was isolated and guarded. The disease died out in it without touching any of the other fortlets which were only an hour's journey distant from each other. *(Records of the Ottoman Sanitary Intendancy.)*

From these facts, the Committee is led to conclude *that the effect of sanitary cordons, employed in a thickly peopled country, is uncertain, and frequently dangerous; that, on the other hand, employed within reasonable limits of space, or in countries, with thin and scattered populations, as in certain Asiatic countries, these cordons are destined to render great service against the propagation of the disease.*

III.—Of the isolation of the foci of cholera.—What are the lessons of experience on this head?

If we take the question of isolation in its general point of view, it is intimately connected with that of cordons, for, directly cordons become useful, and directly it is possible to establish them, we are sure of succeeding in beneficially isolating a focus of cholera, and we have just seen under what conditions cordons may be established with a chance of success. The isolation of a focus then is practicable and useful in certain cases, and difficult in others. In the East, for instance, where villages are comparatively scarce, where the relations between one town and another are not so frequent as in Central Europe, and where the habits of the people are sedentary, the application of isolation is much easier than in countries where the rapidity and multiplicity of communications, commercial activity, and the interchange of interests, keep the waves of population in perpetual motion. In this case contravention of the regimen would be inevitable, and the object of isolation would not be attained. Nevertheless, *we are of opinion that isolation, wherever it can be applied to the first cases*

marking the outbreak of an epidemic, is a measure of prudence, the adoption of which no country having a regard for its safety ought to neglect.

If, on the other hand, we regard isolation in its connection with the initial foci of cholera, we do not hesitate to reply in the words of the programme—*that the closer restrictive measures are applied to these foci, the more may their efficacy be depended upon.* In fact, the transmissibility of cholera being admitted, as well as the efficacy of quarantines and of disinfection in stifling its germs, it follows that isolation has infinitely more chances of success in operating upon a centre than upon the circumference and after the epidemic has spread in all directions. Assuming, for instance, that had measures of isolation been taken at Suez in 1865, when the pilgrims brought cholera there from the Hedjaz, is it to be believed that cholera would have shown itself at once at Alexandria, thence invading the entire basin of the Mediterranean in the space of a month? And can it be asserted that quarantines would succeed better in circumscribing ten secondary foci than in effectually isolating one single primitive focus? The fact is so patent that it appears to us idle to go further into the subject, and we conclude, 1*st, that the more scattered is the population of a place attacked by cholera, and the sooner isolation after the outbreak of an epidemic is effected, the more useful and practicable will such isolation be; 2nd, that the isolation of the primitive foci is the most important prophylactic measure against the invasion of cholera.*

IV.—Temporary interruption of communications with an infected place.— In what cases is this measure applicable?

To interrupt the communications of a locality while cholera prevails there completes the measure of isolation and renders it more efficacious. In this case would happen what is seen to happen in the desert with regard to caravans: the epidemic would die out on the spot without spreading further. But these desperate means are not applicable always and everywhere. They can indeed be employed only rarely, and we do not think they would be possible except when it was sought to extinguish cholera in a circumscribed and primitive focus, like a house, a public establishment, a village, and even a town or a canton. This measure would also be applicable to a seaport town with limited trade, and having only limited maritime relations with the surrounding countries. But, as we have said with respect to cordons and isolation, if cholera has once extended and disseminated itself over a great surface in densely populated countries, or in a large commercial port, this restrictive measure becomes impracticable and illusory.

The facts we have mentioned with respect to the subject of cordons apply, in all points, to the question of the interruption of communications. We think, therefore, we need not revert to them, and we conclude that *interruption is the best means of isolating choleraic foci, and that, consequently, it is right to make use of it whenever circumstances admit of its rigorous execution: but that this measure, applicable as*

it is only within circumscribed places, would become impracticable and inefficacious after the propagation of an epidemic over a great space. (Adopted unanimously, except by Drs. Dickson and Sawas, who voted contra.)

V.—Temporary restriction of communications.—Would it not be advantageous in every respect to restrict emigration from infected places—By what means could the measure be carried out successfully?

The restriction of communications is more frequently applicable, and is more capable of execution, practically, than their absolute interdiction. In fact, this measure, which mollifies the rigor of isolation, consists in not permitting any departure of either persons or things from a contaminated and isolated locality, except under certain determined conditions. Thus the exportation of goods would be authorised, with the exception of articles capable of retaining the germs of choleraic infection, and tainted articles or things capable of becoming tainted, such as drills, rags, leather, hides, and other animal matter of this kind. As to persons, in seaport towns it would be well to restrict their embarkation as much as possible, and to subject them, before doing so, to a series of precautionary measures, such as, for instance, a special medical visit and the purification of their effects and wearing apparel, &c. But the restriction of embarkation should chiefly be applied to emigration. Let us remember that the diffusion of cholera in 1865 was effected by the current of men that fled from Alexandria, and that thirty-five thousand persons, fleeing from this focus of infection, infected most of the Mediterranean ports in the short space of a few weeks. Let us also remember that these secondary foci, the emigrating movement being directed upon a great number of other localities, spread the germs of cholera over the entire surface of the European continent. This circumstance is specially noticeable in Spain in which country the emigration from the towns, during the last epidemic, assumed extraordinary proportions. From Valencia, with a population of 107,000, 40,000 of the inhabitants emigrated: the population of Palma, generally amounting to 50,000, was reduced as low as 10,000; 15,000 out of 37,000 inhabitants emigrated from Carthagena; the population of Barcelona, amounting to 190,298 inhabitants, was reduced to one-half in consequence of the emigration. And thirty-one of the forty-nine provinces of the kingdom were invaded, and very badly treated by cholera.

It would, therefore, be of immense advantage to prevent the flight from choleraic foci of the avalanches of emigrants who carry the germs of the scourge in every direction. We certainly do not believe this to be possible, and we do not propose rigorously to prevent the departure of the inhabitants of a great town stricken by cholera. But are there no means of so regulating the movement as to diminish its disastrous effects? Are there no means of determining, by law, the number of passengers to be carried by every ship, and so restrain emigration, while

preventing overcrowding? On this point we concur in the opinions of the Committee on hygienic measures in times of cholera *(additional note, article—Sanitary Police at departure)*, and we propose, *first, to restrain emigration within the limits of an infected town; second, to fix by a legislative enactment the number of persons to be carried by a ship in proportion to its capacity; third, to subject these persons and their baggage to previous precautions such as a medical visit, the purification of their wearing apparel, and baggage, &c.* The Committee is of opinion that this system is a very important guarantee, not only with respect to the ports of destination, but also with respect to the passengers, whose lives are perhaps more exposed to danger on board crowded ships that have started from a choleraic focus, than in the infected town they have quitted.

CHAPTER III.

QUESTION OF LAZARETTOS.

VI.—Lazarettos.—What are the conditions demonstrated by experience to be necessary for these establishments to answer in every respect to what they are intended to be? Questions relative to the choice of site, distance from inhabited places, mode of construction, interior distribution, classification of the persons in quarantine, &c. Lazarettos of observation? Temporary lazarettos? Floating lazarettos? International lazarettos?

The lazarettos at present existing in quarantine ports in Europe as well as in the East, were established at more or less remote periods with a view to preservation against the plague,—a disease reputed to be eminently contagious. These lazarettos, no doubt, rendered great service while they were fulfilling their special object; but the nature of cholera and the laws of its propagation differ essentially from those of the plague; and at the present day, it is demonstrated by experience that these establishments, such as they are, do not offer any serious barrier against the invasions of the Indian scourge.

During the last epidemic the greater part of these lazarettos failed in their object, by allowing cholera to penetrate into the towns in proximity to which they were built. The defects attributed to them are numerous:—defects of site, construction, distribution, internal regulation, and others, which must be taken into consideration in the system of quarantine appropriate to cholera.

On the other hand, improvised lazarettos, consisting of tents and huts, but with complete isolation and communications with inhabited places interrupted, have afforded the best results. This contrast is striking between the lazarettos of Greece, Crete, and Volo, organised upon islands, and the lazarettos of Odessa, Ancona, the Dardanelles, &c., situated in proximity to towns. Here the communication with the

inhabitants of the neighbourhood, overcrowding of passengers, the confinement of the infection, developed the choleraic germ, and propagated the disease; there isolation, the open air, and a large space, acted in a contrary manner, dissipated the germs of cholera, and prevented the propagation of the disease.

The lesson to be drawn from this experience is that, in the selection of places intended for quarantine establishments, preference must, above everything, be given to desert isles; and, *secondly*, to places very distant from centres of population, and so situated as to ensure absolute isolation.

But, isolation having been obtained, many other conditions yet remain to be fulfilled in the choice of a site for a lazaretto: *Firstly*, the composition of the soil. The most suitable soil should be of a rocky and granitic consistency, seeing that a porous and alluvial soil, by its permeability, is susceptible of becoming, according to the now generally admitted theory, a receptacle of morbific germs. *Secondly*, it is also necessary to avoid marshy soils, foci of intermittent fevers, and which are adapted naturally, in the circumstances assumed, to facilitate the evolution of the choleraïc principle. *Thirdly*, it is important that the site intended for a great lazaretto should be provided with water of good quality and sufficiently abundant to meet the wants of the occupants of the lazaretto. *Fourthly*, a condition of the highest importance is that of good anchorage, sufficiently large to be capable of safely sheltering a large number of ships. Facility of access in all seasons would be all the more necessary if the establishment were placed in an island, because then the supplies should be regular, and so kept up as to allow the persons in quarantine to want for nothing.

VII.—After the selection of a site, the question of the plan and construction of the lazaretto presents itself. The defects of those that now exist may be pointed out in a few words. Imagine a square court yard, a sort of cloister, surrounded by buildings communicating with each other, more or less, and forming the dwellings of the persons undergoing quarantine, the store-houses intended for the deposit and disinfection of the merchandise, an infirmary (which does not always exist), a parlor, and some rooms assigned to the administration of the lazaretto. The capacity of these establishments for seasons in which a choleraic epidemic prevails is generally insufficient, for never since the period of the plague has such emigration *en masse* been seen as has been provoked by the fear of cholera; and, on the other hand, the arrangement of the quarters tends in itself singularly to produce a mixture of categories which ought to be kept carefully separate and distant from each other. All these buildings ought to be abandoned, or should be used as quarantines of simple observation, and be replaced by constructions conceived upon a plan adapted to their new destination.

In 1865, quarantine was performed, as we have said, either in lazarettos, or in tents or huts. The system of huts has afforded very

good results and would be preferable to masonry buildings, were it not for their want of solidity and their ephemeral nature. Encampment in tents will always be advantageous in certain Oriental countries, and on the shores of the Red Sea, where the climate and the habits of the people are adapted to it; but it is especially applicable to the masses of pilgrims on their return from Mecca. With these exceptions, the system of masonry buildings is what we propose to adopt generally for the quarantine establishments of whose plan and internal distribution we are about to give a brief sketch.

An extensive site being given upon an island, if possible, or, in the absence of an island, in a place several miles distant from any habitation, on it should be constructed the lodgings of the persons undergoing quarantine, a hospital for cholera patients, wash-houses, stables, and an enclosure for animals, a hotel, rooms for the administration and other accessory buildings. There should also be a wharf, store-rooms for merchandise and provisions, an office for the maintenance of relations between the lazaretto and the outside world.

1*st*.—The dwellings of the persons undergoing quarantine should consist of several ranges of small houses, all only one story high, divided interiorly into four compartments, pierced with windows on all four sides, and capable of accommodating 20 persons, or five in each compartment. Each house or pavilion should be about 20 métres away from the next, and each range should consist of 10 of these buildings, and be 100 métres distant from the next range. This system is in force in Greece, and worked well during the last epidemic.

We shall return further on to the important question of the distances to be marked between the different buildings composing the entire establishment.

2*nd*.—*The hospital* should consist of several separate pavilions built on the same plan as the lodgings of the persons undergoing quarantine. It should be divided into two departments, one of which should be devoted to cholera patients, the other to patients suffering from simple diarrhœa. Each pavilion should be in an exposed position and well ventilated, and should contain from five to ten beds. A dispensing room, provided with all necessary medicines, should be attached to the hospital, as well as a kitchen for the use of the convalescent. And in addition, a dwelling should be reserved for the physicians and hospital assistants.

3*rd*.—*Two wash-houses* should be set up in each lazaretto, one for the hospital, the other for the persons undergoing quarantine. They should be situated in different places at a distance from each other, as well as from the other buildings of the establishment, and particular care should be taken to prevent the water flowing out from infiltrating the surrounding soil.

4*th*.—A stock of bedding and furniture should be placed at the disposal of the establishment, and the administration should see that these articles are so kept as not to become agents of transmission.

5th.—The Committee, moreover, is of opinion that it would be advisable to establish three classes of lodgings:—the first for well-to-do persons; the second for persons passably well off; and the third for persons less accustomed to certain comforts. The charge for these lodgings should be fixed by regulation, and differ according to the class.

6th.—*The hotel* of the lazaretto ought to be isolated and provided with the necessary provisions, the prices of which should be fixed by competent authority. The servants of the inn should, in no case, be allowed to communicate with the persons in quarantine.

7th.—*The store-rooms* intended for merchandise, not subject to purification, ought to be situated without the precincts of the lazaretto and near the wharf, so as to facilitate the operations of landing and re-shipping. They should, moreover, in point of capacity, be proportionate to the probable degree of importance of the quarantine establishment. The store-rooms for susceptible merchandise, ought also to be of a capacity proportionate to this importance, but might be comparatively smaller than the others, articles subject to disinfection being very restricted, as we shall see further on. The situation of these latter stores ought to be different from that of the former, but always outside the enclosure of the lazaretto, and at such a convenient distance from the ships as to facilitate their operations.

8th.—As a lazaretto must necessarily be guarded by an armed force of greater or less strength in order to ensure order and security, especially if situated in an island or a remote and solitary spot, it becomes necessary to provide quarters for the military. A *guard-room*, then, must be built at a distance of 200 mètres at least from the quarantine establishment, for it is a matter of importance to give the soldiers as much security as possible from the attacks of the disease.

9th.—We have spoken of the *wharf*. There must be two for each lazaretto,—one for the landing of persons and merchandise under foul bills of health, the other for those under free pratique. It is necessary, moreover, to have a health office, where the superintendent of the whole establishment should reside. He must live near the port, for he must be in connection, on the one hand, with everything concerning the lazaretto and its dependencies, and, on the other, be the intermediate agent of communication with the outside world.

10th.—The question—whether it is necessary to keep up the custom of parlors attached to the lazarettos, and to permit the visits of outsiders to the persons undergoing quarantine—gave rise to a discussion in Committee. It was maintained on the one hand that such visits should be strictly prohibited, because isolation, even in an island, could not possibly be complete while persons were going to and fro between the town and the lazaretto; because the privilege would certainly be abused; and that, the principle being admitted that, at a given distance, the air is the vehicle of the choleraic germs, it follows that the disease may communicate itself to visitors, and so propagate itself, in spite of all the rigors of isolation. On the other

hand, it was thought that such a prohibition would be too severe; that a distance between the visitors and the persons in quarantine as great as that between the quarters of the latter would sufficiently guarantee the former from all attack, and that consequently there need be no apprehension of a compromise. Although the justice of these remarks was clear to the majority of the members of the Committee, yet, having regard to the probability of abuses, and the necessity of maintaining the strictest stoppage of communication between the town and the lazaretto, the opinion prevailed that it would be prudent to do away with the parlors of lazarettos and prevent visits. M. Pelikan, however, dissented from this view, thinking that parlors were necessary for exceptional cases. What is said of visits is not, it must be understood, applicable to such persons as may wish, for some reason or other, to enter the lazaretto and stay there for the full period of the quarantine of those with whom they may be in communication, and who may chose to submit to all the consequences of their position.

11*th*.—The Conference having admitted "that there is no known fact proving that cholera has been imported by living animals, but that it is rational to consider them, in certain cases, as being so-called susceptible objects, and that, moreover, they may, by means of their covering, serve as receptacles of the principle of the disease," the Committee is of opinion that it would be right to subject them to measures of purification, and, consequently, every lazaretto ought to be furnished with a special enclosure, stables, and cattle-sheds, in which animals should be kept and subjected to such measures as may be considered necessary.

12*th*.—One of the questions which greatly occupied the Committee was that of latrines. It passed all existing systems in review. In the old lazarettos each room had its closet, or there was a range of closets for the use of all the persons in quarantine, discharging into fosses or sinks, vicious systems which could not be continued without great danger in the point of view of cholera whose principal source of propagation is in the *excreta*. Among the modern systems, that which seemed to the Committee to be best adapted to lazarettos is the system of *movable cesspools*, charged with disinfectants, such as sulphate of iron, quicklime, and such other chemical agents as have been proposed for this purpose. The excrementitious matter should then be taken away, thrown into ditches dug in the soil, and covered with quicklime and vegetable charcoal dust. (*Report of the Committee on Disinfectants.*) Two members of the Committee were desirous that each person in quarantine should have a separate vessel, so disposed that the physician might be able, in his daily visit, to inspect his alvine dejecta, and thus find out the commencement of diarrhœa. But this system, though practicable perhaps in hospital, seemed to the majority of the Committee to be too complicated for a lazaretto containing hundreds of persons, and the Committee, in conclusion, decided upon the adoption of the best movable latrines, charged beforehand with disinfectants. It was also of opinion that in all lazarettos intended for

choleraic arrivals common fosses and easing places should be done away with.

13*th.*—In speaking of the quarters of the persons in quarantine, we have said that each pavilion should be 20 mètres distant from the other, and that there should be a space of 100 mètres between each range of pavilions. This distance the Committee thought it might adopt as a rule for a minimum, in accordance with the opinion that cholera might, in certain cases, be transmitted by the atmosphere as far as 100 mètres. (*General Report, chapter XXX.*) This system would, in the first place, permit of the easy isolation of the group of persons occupying a pavilion amongst whom one or more cases of cholera might occur; it would, moreover, ensure the complete separation of the different categories of persons in quarantine according to the degree of suspicion and the date of arrival. To effect the isolation of each of these categories is a question of the highest importance. Unless this precaution is strictly observed, we shall have a repetition of the infection that then occurred, which so greatly contributed to the propagation of the disease in 1865 in the lazarettos of the Dardanelles, Beyrout, Salonica, &c., for it is easy to conceive that a healthy individual is exposed to contract the disease in the lazaretto up to the very last moment preceding his admission to pratique. The separation of the categories is, therefore, a condition of security for the persons in quarantine, and a necessary measure to prevent the spread of cholera beyond the precincts of the lazaretto; and the Committee concludes that it ought to be maintained with the greatest strictness.

The distance to be maintained between the different buildings of a lazaretto depends upon the space at command; and it would be difficult to fix it beforehand with exactness, but it ought to be a rule that the hospital should be at least 200 mètres distant from the quarters of the persons undergoing quarantine; that the quarters of the employés should be still further away from the hospital, as well as from the quarters of the persons in quarantine; and that the inn, the goods stores, and the cattle-sheds, should be situated outside the precincts of the lazaretto at still greater distances from each other. Generally, it is important not to lose sight of the fact that isolation is not complete unless there is an unoccupied space of 200 or 300 mètres around the various buildings occupied by cholera patients, by patients suffering from simple diarrhœa, by persons undergoing quarantine in good health, and by the employés.

14*th.*—*The employés.*—The question of the persons employed is of the greatest importance in the organisation of a lazaretto; but we do not think it necessary to go into detail on this point. We leave it to each Government to decide as to the number and capacity of these employés. However, we invite attention to the propriety of confiding the superintendence of quarantine establishments to instructed physicians who understand the value of the measures applicable to cholera. We propose, moreover, that each lazaretto should have three physicians —one to be attached to the hospital, the second to the persons in

quarantine generally, both of them being kept strictly to their own special department, and having no communication with outside; the third to be entrusted, under the orders of the superintending medical officer, with the port duties, the entrance and the departure of the persons performing quarantine.

VIII.—1*st.*—*Of the number of lazarettos.—Lazarettos of observation.* We have just indicated the plan in accordance with which lazarettos appropriated to rigorous quarantines, to which ships under foul (cholera) bills of health must proceed, should be built. The number of these lazarettos should be as restricted as possible, but always in proportion to the extent of seaboard possessed by each State; for, on the one hand, we must avoid too much crowding at any single point; and, on the other hand, it would be dangerous to permit the indiscriminate dissemination of choleraic arrivals in several localities. In the settlement of this question, it is quite as important to protect the interests of public health as to see that those of navigation and commerce do not suffer. By causing these two elements to harmonise in a compatible measure, we should arrive, without very much difficulty, at the rigorous application of restrictive measures.

Here is what experience teaches us with regard to this subject. Russia, Turkey, Greece, and perhaps other States, have three kinds of quarantine establishments: a limited number of lazarettos for the rigorous quarantine; a greater number for the quarantine of observation; and more numerous posts, the object of which is merely to control arrivals and to *viser* bills of health.

This system seems to the Committee to be of incontestible practical utility, for, at the same time that it limits the number of quarantine establishments of the first class, it allows lazarettos of observation to remain. These latter should be specially devoted to taking charge of certain arrivals under clean bills whom the sanitary authorities may have reason to suspect, either because the port of departure does not offer all the desirable guarantees of security, or on account of circumstances peculiar to the ships under suspicion, or on account of communications at sea, or of having touched at intermediate ports of call of a suspicious nature. Lazarettos of this kind might exist, without inconvenience, in all ports frequented by much shipping, and without requiring so many accessories as have been indicated for rigorous lazarettos, considering that the quarantine of observation does not, save in exceptional cases, require the landing of passengers or goods.

2*nd.*—*Temporary lazarettos*, the objects of which are arrivals by sea or by land, have only a provisional character. Their object is to preserve a locality not possessing a permanent lazaretto from invasion by the epidemic, and the experience that has been had of them in the East during the last epidemic is a sufficient proof of their efficacy. We mean the system of encampments—a system which will always be of great service; for it is, perhaps, the only one possible in certain

Asiatic countries on account of the climate and the manner of life of the people. We believe it to be specially applicable to great masses of persons in quarantine and to pilgrimage.

3*rd.*—*Floating lazarettos* are pontoons or hulks which, if regulated as well as possible, might be utilised in urgent cases in the absence of local conveniences. They were made use of in New York to isolate, at once, the passengers arriving in vessels with cholera on board, the *Atlanta*, the *England*, the *Virginia*, with the most satisfactory results. (*See the Historical Report upon the march of Cholera, Art. New York.*) But in very many cases floating lazarettos do not possess, generally speaking, anything like the requisite conditions of ventilation and salubrity, and the Committee cannot recommend their employment, except in very urgent and exceptional cases.

IX.—*Question of International Lazarettos.*

Taken in its widest sense, an international lazaretto would mean a mixed institution, both as regards the employés and the cost of maintenance, which would be shared by the Governments interested. Situated in a convenient spot on a well-frequented maritime track, or at the entrance of a sea, all ships coming from an infected place, should be obliged to perform quarantine there. Such an establishment would possess the advantage of preventing the dissemination of contaminated arrivals upon several points, and of thus restricting the chances of the propagation of the scourge. Its maintenance in common might also contribute to make it a model establishment, in the point of view of salubrity and well being, as well as that of an administration, economical in expenditure, and strict in the application of the necessary measures, for everything would be placed under the direct control of each Government represented.

But all these advantages, real as they are, are counterbalanced by numerous disadvantages. In this way there would be, *first*, as many differing opinions, in certain cases, as there are representatives of Governments interested; and, therefore, a difficulty in arriving at an understanding and conflicts of opinion and authority; *second*, great prejudice caused to commerce and navigation by ships often being forced to take an opposite path to that of their destination, in order to perform quarantine in a more or less remote place. It will be understood that disastrous consequences may be entailed, upon sailing ships especially, by such a détour; *third*, a great accumulation of ships and persons, possibly giving rise to the formation of vast foci of infection, dangerous in every respect, and such as are only seen in the crowds attendant upon pilgrimages, and which must be avoided at any cost; *fourth*, and lastly, there would be an encroachment upon the sovereign rights of the country in which a mixed establishment of this sort might be situated, and it may be presumed that no Government would feel disposed to admit it upon its territory. The Committee, consequently,

after having weighed the advantages and disadvantages of such a project, suggests its abandonment.

In giving a more restricted sense to the signification of the words "international lazaretto," however, the question presents itself under a more practical aspect, and one more worthy of attention. We mean an establishment situated in a position advantageous to navigation, administered by the local Government without any foreign interference, in which ships of two or more nations might be allowed to perform quarantine by virtue of a special convention between the Governments interested, and the payment of a duty settled by common consent of the contracting parties. This system is in force in the Baltic between the States having seaboards there. Sweden possesses the establishment of Kanzoë, an islet in the Cattegat on the west coast of Sweden, administering it singly, paying its expenses, and reimbursing herself by a duty which she levies upon the ships, and which has been settled between her, Russia, Prussia, Mecklenburg, and Denmark. Since its existence, the establishment has afforded satisfactory results, both as regards the welfare of the persons undergoing quarantine and the public security. The Committee thinks it would be advisable to recommend this system to Governments who might think it useful to adopt it.

To sum up, the Committee proposes the following conditions in the institution of quarantine establishments:—

1*st.*—*That the lazarettos should, as far as possible, be set up in desert isles, and, in the absence of isles, in isolated localities, many miles distant from towns, villages, and other inhabited places. That the air of those localities should be wholesome, the soil rocky, water abundant, and anchorage easy, certain, and spacious.*

2*nd.*—*That the buildings, of which these lazarettos are composed, should be constructed in accordance with the principles of Article VII of the present Report, and so as to ensure the strict separation of the different classes of persons in quarantine, according to the nature of the arrival and the date thereof. That the isolation of the cholera hospital, the quarters for the persons performing quarantine, the wash-houses, the store-rooms, and cattle-sheds, the quarters of the employés, &c., should be complete. That the distance between all these buildings, though it is impossible to fix it in anticipation, should harmonise with the indications given in paragraph* 13 *of the Report.*

3*rd.*—*That the latrines should be organised in accordance with the system of movable sinks, charged with disinfectants. That common sinks and sewers should be proscribed. That excrementitious matter should be thrown into ditches dug in the soil, and covered with quicklime, argillaceous earth, or vegetable charcoal dust.*

4*th.*—*That each lazaretto should be provided with two wharfs, one for quarantine purposes, the other for pratique, a health office, quarters for the administration, a military guard, a stock of bedding and furniture, a stock of provisions, and an hotel.*

5th.—That the visitors' parlors in lazarettos should be done away with, and visits to persons performing quarantine prohibited; that, however, permission might be given to persons to enter a lazaretto, provided they undertook to stay there, submitting, in that case, to the rules governing those persons performing quarantine with whom they might be in communication.

6th.—That the superintendence of quarantine establishments should be entrusted to medical men, and that, moreover, each lazaretto should be provided with at least three medical officers, one for the hospital, another for the persons undergoing quarantine, the third appointed to the port and the exterior of the lazaretto.

7th.—That the number of lazarettos for the rigorous quarantine should be limited in proportion to the maritime movement and the extent of seaboard possessed by each State; but that there should, however, be secondary posts for arrivals subjected to the quarantine of observation.

8th.—That, in urgent cases, temporary lazarettos should be established, encampments, or floating lazarettos, according to the particular circumstances of each locality.

9th.—The Committee finally is of opinion that, in general, the institution of international lazarettos, administered by mixed Commissions, cannot be recommended on account of the inconveniences of the system and the insurmountable obstacles most frequently opposed to its realisation.

All these conclusions were unanimously adopted by the Committee, excepting the last, with regard to which MM. Maccas and Pelikan have recorded the following opinion:—"Admitting that, in general, the institution of international lazarettos, administered in common by the employés of several Powers, cannot be recommended, we are, nevertheless, of opinion that in certain cases, the utility of these establishments, administered by the local authorities under the control of mixed boards, is incontestable."

CHAPTER IV.

Of Quarantine Regulations and Disinfection.

As has been demonstrated in chapter II, the lessons of experience militate in favor of restrictive measures, rigorously applied, against the importation of Asiatic cholera.

If it were necessary to revert to this question to strengthen the proofs of the efficacious action of quarantines, we could quote the arguments brought forward in the *General Report* upon the subject of transmissibility, and we might enumerate the numerous cases of preservation recorded in the historical précis upon the cholera of 1865. We might mention, one by one, all the towns that have been saved from the scourge by the application of quarantine measures; all the lazarettos where the disease, having been introduced by infected

arrivals, was stifled. We might once more bring to your notice the results obtained in Greece, Crete, New York, and many other places where cholera found, in isolated lazarettos, barriers which it was unable to pass, notwithstanding all the violence of the foci formed in them. Do not all these facts sufficiently prove the efficacious action of isolation and disinfection, that is to say, of quarantine measures? The Committee is of opinion that doubt upon such a matter is impossible.

The Conference on its side has admitted as an incontestible fact:—"1*st*, that there are no original foci of cholera in our countries, into which the disease is always introduced from without; 2*nd*, that cholera is transmitted by men affected by the disease, as well as by contaminated objects; 3*rd*, that the atmosphere is the chief vehicle of the generative principle of the disease, but that its transmission through the atmosphere is limited to a very short distance from the focus of emission." Now, it follows logically from these facts and these principles that measures of quarantine, or, in other words, isolation and disinfection, are applicable on every occasion when it is to be dreaded that the transmission of cholera may be effected, either by sick men, or by articles containing the germs of the disease.

In coming to the most important chapter of quarantine systems, we take upon ourselves again to invert the order of contents in the programme, so as to facilitate its study; but we shall take care to reply to all the questions laid down omitting nothing that ought, in our opinion, to form the base of prophylaxy. Thus, we divide the work into two sections: in the first we treat of the quarantine, properly so-called, of the difference to be observed between the rigorous quarantine and the quarantine of observation, the duration of the quarantine and the various conditions of its application to persons and ships; in the second, we make an exposition of the system of disinfection applicable to ships, to objects supposed to be contaminated, to baggage, wearing apparel, merchandise, living animals, &c.

X.—Question regarding quarantine.—Is it right to admit two sorts of quarantine under the names of quarantine of observation and rigorous quarantine? In what does this difference consist?

A quarantine is composed of two essential elements, the isolation of an arrival and disinfection. Applied to objects reputed to be susceptible of transmitting the disease against which it is desired to have a guarantee, it is separated into a rigorous quarantine and a quarantine of observation. This distinction, which we are about to explain clearly by showing the difference between the two systems, was established by ancient regulations; it was maintained by the Sanitary Conference of Paris, and your Committee *thinks it necessary in the system of prophylaxy applicable to cholera.*

The quarantine of observation consists in keeping at a distance and watching a ship, her crew, and her passengers, for a time generally not

exceeding a few days, reckoning from the time of placing the health guards on board, but which may be prolonged by the sanitary authorities. It does not entail the landing of goods, unless at least they should consist of damaged or rotten articles. It does not require disinfection, but simply general hygienic measures. It would be difficult to determine all the circumstances in which this quarantine is applicable: we must leave this to the discretion of the sanitary authorities, but we are enabled to mention the chief circumstances. It is applicable to vessels which are regarded as suspicious, though provided with *clean bills of health*: 1*st*, on account of the suspicions which may exist relative to the sanitary condition of the port of departure, so as to give time to dissipate such suspicions, or on account of a ship's having touched intermediately at a doubtful port of call, or had doubtful communications at sea; 2*nd*, in proportion to the particular conditions of the ship subjected to the quarantine, and the sanitary conditions of the crew and passengers. The quarantine of observation may be performed in all ports where there is a sanitary department. The passengers remain on board, or are landed at the lazaretto, according to the special conditions of each arrival.

The rigorous quarantine is the sequestration and isolation, for a certain fixed time, of ships as well as persons, together with the disinfection of every thing that is susceptible of containing the morbific germs. The rigorous quarantine necessarily implies the landing of goods at the lazaretto. It is applicable, 1*st*, to ships from an infected port, under *foul* (cholera) *bills* of health, with the exceptions hereinafter indicated; 2*nd*, to ships which may have had choleraic accidents on board during the passage, although carrying *clean bills*. The rigorous quarantine commences, for ships in ballast, from the moment the health guards go on board; for loaded vessels, after the unshipment of the cargo; for persons, immediately on their entrance into the lazaretto. To sum up: *the difference between the two systems consists*, in the opinion of the Committee, *in this that the quarantine of observation is a time of proof, of simple surveillance, while the rigorous quarantine consists in landing at the lazaretto, as well as disinfection and comprises all the measures applicable to a choleraic arrival.*

XI.—Of the quarantine applicable to persons coming from a contaminated place.—What ought to be its duration? From what time should the quarantine be considered to have commenced?

The quarantine meant in this question of the programme is the rigorous quarantine, that is to say, that persons coming from a contaminated place must, on their arrival in an uninfected locality, be subjected to the system of isolation in a lazaretto, and that their baggage must be subjected to disinfection.

But what should be the duration of this rigorous quarantine? This question is without doubt the most important of all those which, collectively, constitute a system of quarantine; and we must confess that it is also the most difficult of solution, for it is essentially connect-

ed with the period of incubation of the disease, with regard to which opinions are as yet far from being in harmony. It is true that the problem has just been in a manner solved by the Conference in the conclusion of chapter XIII of the *General Report*, where it is said that "in almost every case the period of incubation, that is to say, the lapse of "time between the contraction of the choleraic poison by a person and "the commencement of premonitory diarrhœa or confirmed cholera "does not exceed a few days, and that all the instances mentioned of a "longer incubation are not conclusive, either because the premonitory "diarrhœa has been included in the period of incubation, or because the "contamination must have occurred after departure from the infected "place." But notwithstanding that this opinion is strongly supported by general observation, exceptions are mentioned which would lead to the admission that the period of incubation may last for two or three weeks.

Another question connected with the same subject is that of premonitory diarrhœa, which very probably is apt, like confirmed cholera, to transmit the disease. It has been maintained in fact that cases of diarrhœa have been observed to last for many weeks, then transmit cholera, and terminate in death. Dr. Pelikan, seconded by Dr. Maccas, insisted upon this point when urging the following considerations:—*1st*, that it is not always easy to distinguish, in cholera seasons, between a simple catarrhal diarrhœa and the choleraic diarrhœa which is considered with reason to be of the same nature, and as dangerous, in the point of view of transmissibility, as cholera itself; *2nd*, that cholera is propagated especially by those who are suffering from this diarrhœa, while they are travelling; *3rd*, that the diarrhœa which breaks out on board a ship from a choleraic locality is of this nature in the immense majority of cases; *4th*, that, in general, individuals attacked by simple catarrhal or bilious diarrhœas are very much disposed to contract cholera in epidemic seasons. But the majority of the Committee adhered to the opinion of the Conference expressed as follows:—"Observation shows "that the duration of choleraic diarrhœa, premonitory diarrhœa, as it is "called, and which must not be confounded with all the diarrhœas that "exist in cholera seasons, does not exceed a few days. The cases men-"tioned as exceptional do not prove that those cases of diarrhœa which "are prolonged for a longer period are choleraic and are susceptible of "transmitting the disease when the individual attacked has been kept "from all sources of contamination."

We would have refrained from discussing these questions of principle which are only indirectly connected with our sphere of operations, and we would have confined ourselves simply to adopting as a rule the opinion of the Conference upon the duration of incubation and diarrhœa with respect to the duration of quarantine, if the members of the Committee had not, as we have just said, disagreed. Nevertheless, notwithstanding this divergence of views between the majority and minority, the Committee, taking as its basis, the vote of the Conference upon the questions of the duration of incubation and the duration of

diarrhœa, proposes that *the rigorous quarantine applicable to persons coming from a contaminated place ought to be fixed, as a general rule, at ten clear days, and that this quarantine ought to commence, for persons, as soon as they enter the lazaretto. That if, during the course of the quarantine, any cases of cholera or choleraic diarrhœa should occur amongst them, the healthy persons should be separated from the sick and recommence the quarantine of ten full days.* (*Adopted unanimously, except by M. Pelikan, who proposed a quarantine of fifteen days.*)

The Committee believes that, for persons, a quarantine two or three days longer than the ordinary maximum duration of incubation is a sufficient guarantee against the transmission of cholera; but it thinks it right to invite attention to choleraic diarrhœa which, as has been said, is not always easily distinguishable from other diarrhœas, and whose aptitude to transmit cholera is very probable. Consequently, the Committee is of opinion *that it would be right to consider persons suffering from diarrhœa as suspicious, to isolate them from healthy persons as well as from persons suffering from cholera, and not to admit them to pratique, after the termination of the regulated quarantine, unless medical inspections shall have shown that the diarrhœa is non-choleraic.*

(Adopted by all, except MM. Pelikan and Sawas, who thought that pratique should not be given to persons suffering from diarrhœa, coming from a place infected with cholera, until after their thorough cure, except in chronic cases declared to be such by a medical certificate furnished at the port of departure).

XII.—Quarantine applicable to ships supposed to be contaminated.—Should not a distinction be made between those in which cholera has manifested itself and those in which it has not made its appearance? What should be the measures applicable in each case? Should disinfection always be rigorous? If a serious epidemic of cholera should break out on board a crowded ship, would it not be proper to subject her to exceptional precautions? What should these precautions be?

It is a principle that every ship coming from a place infected by cholera is subjected to the rigorous quarantine. In this case, after survey on arrival, a ship of this class is isolated, the passengers are landed at the lazaretto as well as such merchandise as is subject to purification, and disinfecting measures are immediately proceeded with.

Here we meet with the case of the difference to be established between a ship arriving from an infected locality, and which has had cases of cholera or of choleraic diarrhœa on board during the voyage; and another ship whose crew and passengers have enjoyed a satisfac-

tory state of health, and on board of which no cases giving rise to suspicions of cholera have occurred during the voyage.

In the first case, after the landing of the passengers and the unloading of the goods at the lazaretto, the ship, being anchored in an isolated place, should be disinfected by means of the various agents that shall be indicated, the disinfection being repeated at various intervals while the quarantine lasts. If a serious epidemic has broken out on board, and the ship should be much crowded by passengers, it will be understood that more severe measures and more minute precautions should be employed. The most absolute isolation, at a great distance from other ships, disinfection by means of the most active agents, even the prolongation of the quarantine, should be employed in these exceptional cases. In such cases, the Committee would, moreover, feel disposed to recommend that the crew should be landed, at least partially, only a sufficient number of sailors being left on board to execute the disinfecting measures under the guard and supervision of the sanitary agents. We shall revert further on to the means of disinfecting ships in ordinary cases, as well as in more serious ones.

But in the contrary alternative that we have put forward, that is to say, supposing a ship to arrive from a contaminated place without having had any choleraic cases on board during the voyage, and whose hygienic conditions are satisfactory, would it be necessary to subject her to the same precautions as ships on board of which cholera has shown itself? The Committee is of opinion that, in this case, the treatment ought to be much less severe, considering that the danger to be dreaded is not nearly so great. We agree that the isolation and duration of quarantine, fixed at ten days, ought to be the same in both cases; but we think that the great measures of disinfection are not necessary, and that it would suffice to employ simple purification by means of the ordinary hygienic agents, æration, washing, &c.

There is yet another among the different classes of ships which deserves attention, *viz.*, ships that carry merchandise, and have only a small crew, and generally no passengers, or very few, if any. These ships often make long voyages, exceeding fifteen and twenty days. The Committee deliberated whether it would not be just to treat these ships with less rigour than ships making a short voyage, granting that there was no obstacle to so doing in their hygienic condition, and that no choleraic accident had shown itself during the voyage. We are of opinion that, except in the cases of the conveyance of emigrants and over-crowding of passengers, such a long passage is a guarantee which must be taken into consideration, and that it would be right to allow these ships a diminution in the duration of their quarantine.

In conclusion, the Committee proposes: 1*st, to apply the rigorous quarantine to ships supposed to be contaminated, the quarantine being fixed at ten clear days counting from date of arrival; 2nd, to admit a difference between ships on board of which cholera or choleraic diarrhœa may have shown itself, and ships on board of which no choleraic*

accidents occurred during the voyage: in the first case, every rigorous measure, isolation and disinfection, would be applicable; in the second case, the ships might be exempted from unloading merchandise not subject to purification, and should be subjected only to general measures of hygiene without disinfection properly so called; 3rd, to subject crowded vessels, on board of which a serious epidemic of cholera may have appeared, to exceptional precautions which should consist in more complete isolation, disinfection by means of the most active agents, and even to the prolongation and doubling of their quarantine, if necessary; 4th, to reduce to five days the quarantine of ships whose voyage may have lasted for fifteen days without any choleraic accident having occurred during the passage.

XIII.—With regard to maritime arrivals, would it not be proper, under certain specified conditions, to include the duration of the voyage in the period fixed for the quarantine? If so, determine these conditions.

In the preceding chapter we have established three classes of maritime arrivals under *foul* bills of health—1*st*, crowded ships on board of which a serious epidemic has broken out; 2*nd*, those in which some cases of confirmed cholera or choleraic diarrhœa may have occurred; 3*rd*, ships in which the disease has not shown itself. For each of these classes of arrivals, we have proposed more or less severe measures, according to the supposed degree of contamination. For the third class we have said that a quarantine of ten full days would be sufficient, but that there need be no unloading of goods, nor disinfection of the ship, but simply general measures of hygiene. To this category of vessels the question applies, whether it would not be proper to comprise the period of the voyage in the time fixed for the quarantine.

The Committee had no hesitation in admitting that ships under such advantageous conditions, although coming from a place notoriously contaminated, had a right to be treated differently from those in opposite sanitary and hygienic conditions, and it thought it might admit in principle that, under certain determined conditions, the duration of the quarantine ought to be reckoned from the date of departure. These conditions should be, 1*st*, the presence on board of a physician commissioned *ad hoc*; 2*nd*, a series of measures applicable at the place of departure of the ships, during their voyage, and at the place of arrival; that the crew and passengers to be embarked should be officially visited by a physician, who should note their good state of health, excluding such as offered the least indications of choleraic indisposition (persons suffering from chronic affections might be embarked under a special certificate from the medical officer); that the persons embarked should carry with them only so much baggage, as was strictly necessary, and that their linen should be washed before embarkation. The measures to be adopted during the voyage would consist in continuing the disinfection,

æration, and washing of the ships, articles of common use, and especially foul linen. The ship's doctor should look after all these operations, verify the state of health of the persons embarked, keep notes in a register of any choleraic accidents he may have occasion to observe, which register should be submitted to the sanitary authorities at the place of arrival. With these conditions, and when no case of cholera or choleraic diarrhœa has occurred on board, the Committee think that the days spent on the voyage might unobjectionably be taken into account in fixing the duration of the quarantine.

But to what extent should they be taken into consideration with regard to a ship fulfilling all these conditions? What should be her treatment at the port of arrival? It was here that opinions were divided.

Dr. Dickson maintained, on the one hand, that after a voyage of ten days pratique might be accorded without any danger to the public health, according to the admitted duration of incubation. On the other hand, MM. Maccas and Pelikan were of opinion that the system of counting the days of the voyage as days of quarantine was based upon a bad principle; that it nullified the object of the quarantine, and rendered it inefficacious; that measures of disinfection during the voyage could only be carried out incompletely; the most active and conscientious physician to whom the duty might be entrusted would be unable to surmount the difficulties opposed to its execution; that measures taken on board were useful, but that they could not be assimilated to those deemed necessary by the Committee in lazarettos. Consequently, he proposed the reduction to seven days of the quarantine of ships arriving at their destination in very good hygienic conditions after a voyage exceeding a week, and to five days for ships having made a voyage of more than two weeks' duration; but this quarantine should always be rigorous, and the full number of days should always be strictly reckoned. Between these two extreme propositions, an intermediate one was put forward. Several members of the Committee thought that a ship, which should fulfil all the conditions above specified, and on board of which no indication of cholera was manifested during a voyage of nine days, offered a considerable guarantee against the presumption of the existence of the choleraic germ, and that pratique might be accorded to her after a quarantine of observation of 24 hours at the port of arrival, and under the immediate surveillance of the agents of the sanitary authorities, who would be enabled to assure themselves that all the prescribed measures were taken on board, and to note the absence of all choleraic indisposition.

The three opinions we have just detailed were subjects of a long discussion, which, however, terminated without such an understanding having been arrived at as would enable us to submit a homogeneous conclusion to the Conference.

The opinion of the majority of the Committee was as follows:—*Ships under foul bills of health (of cholera), which shall have fulfilled the conditions prescribed during the course of this article, may reckon the days of the voyage as days of quarantine to the extent of nine days. They should, at the port of arrival, undergo a quarantine of observation,*

calculated in such a manner as to make up the regulated quarantine of ten full days.

As, however, the voyages of ships are not always of the same duration, but may vary from one day to nine days and upwards, the Committee proposes the following scale to be observed in the application of the proposed measure :

After a voyage of 24 *hours, a quarantine of observation of* 9 *days.*

„	„	2 days	„	„	8 „
„	„	3 „	„	„	7 „
„	„	4 „	„	„	6 „
„	„	5 „	„	„	5 „
„	„	6 „	„	„	4 „
„	„	7 „	„	„	3 „
„	„	8 „	„	„	2 „
„	„	9 „	„	„	24 *hours.*

For ships whose voyage may have exceeded nine days, the quarantine of observation should always last for at least 24 *hours.*

XIV.—After the arrival of a ship, can quarantine be performed on board? In what cases, within what limits, and how?

This question has been solved by what we have said regarding the quarantine of observation. In this system, the crew of a ship and her passengers remain on board, unless there is crowding, and the contumacy counts from date of arrival. But there are exceptional cases in which even the rigorous quarantine is performed on board. This may be the case in ports where there is no lazaretto, and where ships are compelled by unavoidable stress to put in, as, for instance, such damage as would prevent a ship from ever attaining a quarantine port. The quarantine might also be performed on board ships under foul bills, but whose sanitary and hygienic state was satisfactory, and the number of passengers very limited. In all these cases, moreover, the sanitary authorities would look after the health of the persons in quarantine and the execution of the measures indicated. To sum up: The Committee is of opinion *that the quarantine may be performed on board ships, in the case of a quarantine of observation, and that sometimes also the rigorous quarantine may be so performed, under circumstances of unavoidable necessity, but that in every case the sanitary authorities should be careful that crowding is avoided, and the health of the persons in quarantine should be attentively watched.*

XV.—Land Quarantine.—What ought to be its duration?

The programme does not contain this question, or, at any rate, it is not formally framed there. It is, however, important to know whether quarantine is applicable to land arrivals, and, if so, what ought to be its

duration. As to the first point, it results from the questions, collectively, that have been discussed in this report, that the principle of land quarantine is admissible wherever there is a possibility of its application with any chance of success, as has been said in connexion with cordons and isolation. The Committee, therefore, need not revert to the subject. But as for the duration of the land quarantine, it is a question which it seems to us should be solved.

There can be no doubt that sea arrivals are the most dangerous and the most adapted to transmit the disease on account of the foci which form on board ships; and that, for the contrary reason, land arrivals are less adapted to transport the germs of the disease on account of the æration and isolation of persons travelling, a circumstance which lessens the chances of the propagation of the disease. The Committee believes that this difference between sea and land arrivals authorises a diminution of the quarantine in favor of the latter, except when an epidemic is raging in the neighbourhood; and it proposes, in consequence, *a quarantine of eight full days for all arrivals by land, excepting pilgrimages and movements of troops, the system for which ought to be more severe. It must be understood, however, at the same time, that, if these land arrivals have come from a focus distant only three days' march, the quarantine must last ten full days.*

XVI.—Question of disinfection.

The question of disinfection has been specially treated by the Committee on hygienic measures, to which report we refer. Disinfection, we have said, completes the measures of isolation, and constitutes the rigorous quarantine. It is applicable to all contaminated ships, to wearing apparel and effects, to certain stated kinds of merchandise, and to living animals.

1*st.*—*Of the disinfection of Ships.*

When speaking of the quarantine of ships under foul bills of health, we have said that those on board of which a serious epidemic of cholera has shown itself, or only a few cases of cholera or choleraic diarrhœa, should be subjected to rigorous disinfection. This operation is described in the appendix to the report on hygienic measures. The disinfection ought to commence with the unloading of the goods, by the crew as much as possible, at least unless the sanitary authorities should dispose otherwise in certain grave cases; such, for instance, as a violent epidemic on board, which would necessitate the landing of the entire crew at the lazaretto. The ship being anchored in an isolated place, the well should be emptied, and the disinfection of the hold should be immediately proceeded with by means of fumigations of chlorine; all the hatches should be opened and windsails and ventilators set up to admit plenty of fresh air to the inner parts of the vessels; plenty of water should be used in washing, and painting in oil should complete the disinfection. In the event of a great epidemic on board, all these disin-

fecting measures should be employed oftener during the period of quarantine, and with greater persistence than in less serious cases.

2nd.—Of the disinfection of linen, clothes, and articles of common use.

The facts collected in the *General Report* regarding the transmission of cholera by means of linen made use of by cholera patients (chapter XV) leave no room for doubt that the germs of the disease can be imported by these means from an infected to a healthy place. The conclusion upon this point come to by the Conference is, therefore, that "cholera may be transmitted by articles of common use brought from "an infected place, and specially by those that have been used by "cholera patients, and that the disease may even be carried to a distance "by these same articles shut up from contact with the open air." In consequence, the Committee was unanimous in the necessity of disinfecting linen, articles of common use, and wearing apparel belonging to persons coming from places infected by cholera.

These articles should be landed at the lazaretto at the same time as the persons to whom they belong; before sending them to the wash they should be steeped in water charged with chloride of lime, where they should be left for some time, and then sent to the wash, after which they should be dried in the open air. As for articles of apparel, they should be kept exposed to the open air during the whole period of quarantine. The linen and wearing apparel of cholera patients should be treated with the greatest possible severity, and should be destroyed by fire whenever possible, and when deemed necessary by the sanitary authorities.

3rd.—Of susceptible merchandise and its disinfection.

The aptitude of merchandise to transmit cholera has not yet been demonstrated as a fact, and the *General Report*, in dealing with this important question, gives a very circumspect opinion. That transmission is possible, especially by certain articles, such as drills, rags and hides, eminently apt to become impregnated with the morbific germs, is less doubtful; but it seems certain that merchandise imported from India, either to Suez or direct to Europe, has never transmitted cholera.

Moreover, merchandise can only be contaminated by becoming soiled by the *excreta* of choleraic patients. Now, it cannot be asserted that merchandise, coming from the factories, can be soiled like linen, &c., that has been made use of by cholera patients. Consequently, the Committee thinks that it would be right to establish two great divisions, one comprising well packed merchandise fresh from the place of manufacture, the other rags and drills, hides, leather, and other animal débris, as well as unbaled goods, such as raw wool and other similar articles, which, on board ships coming from contaminated places, would be more or less exposed to coming into contact with the passengers.

Merchandise of the first class, which may be called unsusceptible, should be landed at the lazaretto, placed in a room, and exposed to ventilation during the entire period of quarantine: it should then be disinfected. Goods of the second class, among which the Committee has deemed it necessary to place ready-made clothing because it is made up by workmen, who, if sick, might soil and infect these articles, should be subjected to disinfection by æration, immersion in water, washing, and chemical agents such as chlorides of lime and soda, &c., according to the nature of the goods. Letters and despatches which may be exposed to contamination by being touched by choleraic patients or persons suffering from diarrhœa, enter into the category of objects to be disinfected. Decomposed animal or vegetable matter should be burnt or thrown into the open sea.

4th.—Living animals.

The question whether living animals are capable of contracting cholera and transmitting it to man has not been solved by science, and the Conference has been obliged to decide upon this point with a prudent reserve, which it has expressed in these words:—"There is no fact "to prove that cholera has been imported by living animals, but, on the "other hand, there is nothing to prove that the covering of the animal "may not become, through soiling, a receptacle of the morbific germ, "and carry and transmit it." Foreseeing the possibility of such a case, the Conference, in the second part of the conclusion we have just quoted, adds "that it is rational to include animals, in certain cases, among so-called susceptible objects." Consequently, the Committee thinks that it would be right to subject them to restrictive measures and to disinfection whenever the sanitary authorities shall consider them necessary.

CONCLUSIONS.—*Disinfection consists in the employment of different agents adapted to sanitary objects and places contaminated by the choleraic germ. These agents are air, water, fire, in certain cases, as well as such chemical substances as are recommended by science and pointed out in the Report on hygienic measures.*

Disinfection is applicable—1st, to ships coming from an infected locality on board which either a serious epidemic of cholera or isolated cases of the disease, or merely cases of choleraic diarrhœa, may have broken out.

2nd.—It is applicable to the wearing apparel and other articles used by cholera patients as well as by all persons undergoing a rigorous quarantine, whether at the lazaretto or on board ships.

3rd.—It is applicable also to goods presumed to be contaminated, such as rags and drills, hides and skins, leather, feathers, and other animal substances, as well as wool and other unbaled articles brought from an infected place or from a ship herself subject to disinfection. Letters and despatches should be shut up in a box and disinfected, without being opened, by the evolution of chlorine. As to goods in general fresh from the factories and well packed, they are reputed to be not contaminated and consequently not subject to disinfection.

4th and lastly, disinfection is applicable to living animals by means of exposure to the open air, or immersion in water, when considered necessary by the sanitary authorities.

CHAPTER V.

Of the Bill of Health and Survey.

The presentation of the bill of health constitutes, with the survey of a vessel, what is called, in sanitary matters, the act of survey of a maritime arrival. It may be said that in the point of view of the public health, the bill of health is to a ship what a passport is to a traveller. It records the sanitary state of the port of departure and of the ports of call, and the sanitary authorities note upon it, when they occur, cases of disease subject to quarantine occurring on board. Bearing these points in mind, it will be seen that the bill of health is a document of the utmost importance. And so the programme, in framing the different questions relating to it, did not stop to consider the question whether every ship should have a bill of health or not, a question not requiring discussion, but it carefully pointed out all that, in actual practice, weakened the value of the bill, and consequently the amount of guarantees which should be offered by this document, which is the basis of public security in sanitary matters. We shall follow the exact path traced by the programme, adding only such details as are indispensable to the completion of the subject.

XVII.—Should three kinds of bills of health be admitted: foul, suspicious, and clean?

In actual practice what is called a *foul bill of health* is a bill delivered in a port where cholera prevails; a *clean* bill, that which is delivered in a place where cholera does not exist (and similarly with other transmissible and contagious diseases, such as the plague and yellow fever). *A suspicious bill of health* is an intermediate document which does not define the situation, which does not state whether cholera exists or not, which leaves one in doubt regarding the sanitary condition of the place of departure, because the place, though itself healthy, might be in communication, more or less direct, with an infected locality, or because cases of a doubtful character might have occurred, as well as some other analogous and undefined circumstances. After having discussed the question of the suspicious bill of health, the Committee came to the conclusion to propose its abandonment. In fact, what purpose would it serve to maintain a form of bill which does not describe the real situation, but which is only adapted to lead to error? If cholera should exist, the bill should be *foul:* it should show the number of isolated cases that may have occurred, or it should state the occurrence of an epidemic if the cases should be numerous. If, on the contrary, cholera should not exist within the sanitary circumscription of the place of departure, no mention of it should be made, and then the

bill would be *clean*. It would, moreover, devolve upon the sanitary authorities of the place of arrival to apply the system of the quarantine of observation, and even the rigorous quarantine, according to the degree of danger, to an arrival which they may have good reason to believe in a dangerous condition, even though it should have a clean bill of health. In conclusion, the Committee proposes the *suppression of the suspicious bill of health and the maintenance of clean and foul bills, the former testifying to the absence of cholera, and the latter to its presence as well as the degree of its manifestation.*

XVIII.—When should Asiatic cholera be mentioned in the bill of health, and when should mention of it cease?

In principle one single case of cholera, the first that may manifest itself in any place whatever, ought to be mentioned upon the bill of health, because the first case, when an epidemic is about to break out, is very speedily followed by others, and because it is known at present how important it is to adopt precautions against the chances of importation on the outbreak of an epidemic. If one or more ships were allowed to start with clean bills after the appearance of a case or two, who could assure us that the next cases would not break out on board these ships, which before their departure were just as liable to contamination as the inhabitants of the place they had quitted. They would thus carry the germs of cholera with them to the place of arrival, and propagate the disease amongst a yet untouched population, and one, therefore, for that very reason, all the more disposed to contract the disease. It is of the utmost importance, therefore, that the first known cases should be mentioned on the bills of health.

But here we are met by a circumstance which deserves all our attention. The question is to determine what is meant by the first cases marking the outbreak of an epidemic of cholera. We must distinguish between a case of cholera *nostras*, and a case of Asiatic cholera. It is a matter of fact that Asiatic cholera is an exoteric disease in our countries. Now, if, in the absence of an epidemic in our parts, one or more cases of cholera should suddenly show themselves, and not be traceable to a focus of Asiatic cholera, it is evident that in this case we should have to deal with a disease very different from that which it is important to note upon the bill of health. But if, on the contrary, the first cases that show themselves in a locality are connected with an epidemic raging near, about, or further away, if, in a word, there should be any dread or any threat of an invasion of Asiatic cholera, then it would be necessary to mention the first accidents observed upon the bill of health. This distinction is necessary for the avoidance of mistakes. A cause of error in ordinary language is in frequently confounding the expression of "case of *sporadic cholera*" with that of "*sporadic cases of cholera.*" They are very different: the first expression denotes isolated cases of cholera *nostras*; the second isolated cases of Asiatic cholera. It is these last which it is important to announce upon the bill of health when they show themselves in a town threatened with an invasion of the epidemic.

The bill ought to mention the existence of the epidemic as long as it lasts, and in this there is no difficulty. But when should mention of it cease? We believe that the bill ought to be, from the beginning to the end of the epidemic, only the faithful echo of the situation, and should reproduce the facts as they occur. Thus, on the decline of cholera, the bill should state the number of cases until the complete disappearance of the epidemic; and from and after the date of the last case observed, it should be noted on the bill that since such date no new case had occurred within the limits of the place. This annotation should be the guide of the sanitary authorities at the port of arrival with respect to pratique.

The Committee here put the question as to what time it was necessary to place between the cessation of the epidemic and the pratique to be given to ships provided with clean bills of health? To accord pratique upon the simple statement of a bill of health that there was no more cholera in the place of departure, would be an imprudence which might have disastrous results. In fact, the Committee thought that, especially in a great town, nobody could be sure at once that the last case of cholera had occurred, that frequently fresh cases occurred several days after the last known case, and that there were even instances of fresh and somewhat serious outbreaks of the disease after a short interruption. These considerations led us to believe that it is a necessary precaution to place a term of fifteen days between the cessation of the epidemic and the declaration of a clean bill; in other words, that pratique should not be given to a ship coming from a place where an epidemic has ceased to rage until fifteen days after the appearance of the last case of cholera.

In conclusion, the Committee is of opinion *that the bill of health ought to make mention of Asiatic cholera from the appearance of the first case of the disease down to the last case marking the termination of the epidemic; that the sanitary authorities ought not to give pratique to arrivals from a place where an epidemic has prevailed until fifteen days after the date of its complete disappearance.*

XIX.—Is it not absolutely necessary, as a guarantee for the public health, that a ship should have but one bill of health, delivered by the sanitary authorities of the place of departure, and is it not equally necessary that this bill should not be changed until the arrival of the vessel at her definitive destination?

The bill of health shows the sanitary condition of the port of departure and the ports of call; it shows the number of persons on board, the nature of the cargo, and the state of contumacy or of pratique of the vessel on her departure. It is, therefore, necessary that this document should be unique, and incumbent on the sanitary authorities to deliver it, for they are in a position to be acquainted with all these circumstances, and to state them in the bill on their own responsibility. In actual practice, however, this is not always observed; and it happens sometimes that masters of vessels are in possession of two or three bills,—one from the sanitary authorities of the port, the second from their consul

and the third from the consul of the country of their destination. Now, it is evident that this practice is very dangerous to the public health, not only because the documents sometimes do not agree with each other, but because captains, with a view to escape restrictive measures in certain cases, may elude the vigilance of the sanitary authorities by presenting in a compromised port one of the bills given to them with a *visa* of cholera, and then afterwards in another (uninfected) place the clean bill of health of the original place of departure. Abuses of this sort, which are calculated to compromise the public health of a country, have sometimes occurred, and the sanitary intendancies have notes of them in their registers. It is evident that a single case of this kind suffices in an epidemic season to upset the entire system, to render the most rigorous measures useless and illusory, and to propagate the disease, against which it would be useless to struggle if this dangerous door were left open to it. The remedy would consist in suppressing, with the consent of the Governments interested, all consular bills of health, and to substitute for them consular *visas* upon bills of health delivered by the sanitary authorities. The Committee thinks that this remedy is calculated to satisfy all reasonable requirements.

Another practice equally injurious to the public health is that adopted by the sanitary authorities of certain countries in exchanging the original bills of the place of departure for fresh bills which they deliver to ships touching at their ports before they reach their definitive destination. They thus deprive the sanitary authorities of the next port of call of the only document from which they can learn the antecedent circumstances of the voyage and the sanitary condition of the original place of departure. This is a vicious practice, which should promptly be put a stop to. The means of causing its cessation are simple: it is sufficient to attach *visas* to the original bills without changing them for new ones.

As supplementing the questions we have just examined, regarding the bill of health, the Committee considered whether it would not be useful that the text of this document should be everywhere uniform and in harmony with the principles admitted by the Conference, and whether it was not necessary also that foul bills of health should be of a yellow color to distinguish them better from clean bills, which should be white? As to the first point, we cannot do better than recommend, as a model, the bill of health inserted in the records of the International Sanitary Conference of Paris, and which has been adopted in France and Italy. We think also that it would be useful if the text were printed in two languages, that of the country in which it was delivered, and in French for general purposes, as is the custom in Turkey and in the Russian ports of the Black Sea.

But in regard to the white and yellow colors, we are afraid that they would be more likely to occasion mistakes than to prevent them, for this reason that a bill of health, originally clean, may become a foul bill during the course of the voyage, and *vice versâ*, if the compro-

mised ship were to undergo a rigorous quarantine in a lazaretto port before reaching her final destination.

In conclusion, the Committee, expressly using the words of the programme, expresses the opinion *that it is absolutely necessary, as a guarantee for the public health, that a ship should have only one bill of health delivered by the sanitary authorities of the port of departure; that it is equally necessary that this bill should not be changed until the arrival of the ship at her definitive destination; and that, consequently, the sanitary authorities at the ports of call should confine themselves to attaching their visas to the original bill without replacing it by a new one until the return voyage.*

The Committee also proposes that the Conference should express the wish *that those Governments that attach a peculiar importance to the maintenance of the consular bill of health would be good enough to consent, in the interests of the public health, to substitute for it a consular visa upon the bill of health delivered by the sanitary authorities.*

XX.—Of the Survey and Declaration in times of Cholera.

The declaration is the verbal statement of a captain of all the incidents of the voyage interesting to the public health. At all times it is an important matter, but it acquires greater value during the prevalence of an epidemic. If the captain makes a statement contrary to the truth, he obtains free entry, and the door is open to cholera. This was realised in 1865 at Suez and Constantinople. If he declares that cases of cholera occurred during the voyage, even though the bill of health should be clean, the ship is subjected to the rigorous quarantine; if the statement is not sufficiently intelligible or convincing to the sanitary authorities, the arrival becomes suspicious and liable to restrictive measures. From this it will be seen how important the declaration is in times of cholera.

It is, as we have already said, the complement of the bill, together with which it constitutes the act of survey of an arrival. The admission of a ship to pratique, and, if necessary, her isolation, depend upon it.

In times of cholera ships under foul bills of health, and those which have had choleraic accidents during the voyage, should proceed to a quarantine port in order to undergo the rigorous quarantine. On entering the port, they should hoist upon the main-mast the quarantine flag, color *yellow;* ships under clean bills of health, or subject only to a quarantine of observation, have the *entrée* of all ports: the color of the flag by which they are distinguished before being admitted to pratique, is *yellow:* ships under foul bills of health entering an ordinary port by chance should be sent by the sanitary authority, under the surveillance of health guards, to the nearest quarantine port.

We have said that upon the fidelity of the declarations of the masters of vessels depends, especially when epidemics prevail, the safety of a country. It follows that a false declaration, a culpable reticence, ought to be severely punished by the laws of every country. In connection with this subject, the Committee has discovered an omission in Turkish legislation. Turkey does not possess a penal code applicable to infractions of sanitary regulations. The Committee hopes that this regrettable omission will be speedily rectified in the interests of the public health.

CONCLUSION.—*The declaration is an act of the greatest importance during the existence of cholera. Reticence or false declarations nullify the best constructed restrictive system, and endanger the public health. They ought to be severely punished by the laws of every country.*

With reference to this point, the Committee proposes that the Conference should express a wish *for the speedy promulgation by the Ottoman Government of a penal code against infractions of sanitary regulations.*

Our task is finished. We have shown under what conditions restrictive measures may serve as a barrier against the propagation of Asiatic cholera. We have sketched out a plan for lazarettos, not only to be adopted exactly as given, but one which shows the bases of the quarantine establishments intended to attain this object. We have determined the nature, and fixed the duration, of the quarantine applicable to the various kinds of choleraic arrivals, according to the degree of danger they may carry with them; and, lastly, we have proposed rules to ensure their full value to the bill of health and the act of survey of ships. We believe, we have, therefore, replied to all the questions of the Programme. It rests now with the Conference to decide, by its vote, upon the conclusions of the Report of the Committee.

SALIH EFFENDI, *President*,
STENERSEN, *Vice-President*,
E. D. DICKSON,
BARON HUBSCH, *Secretary*,
MACCAS,
COUNT DE NOIDANS,
PELIKAN,
SALVATORI,
DE SOVERAL,
SAWAS,
BARTOLETTI, *Reporter*,
} *Members of the Committee.*

CONSTANTINOPLE; *The 15th September* 1866.

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 39, OF THE 19TH OF SEPTEMBER 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirty-ninth meeting at Galata-Serai on the 19th September 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Medical Attaché in the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Spain:

Dr. Monlau, Member of the Superior Spanish Council of Health.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d' Affaires.

For Prussia:

Dr. Mühlig, Physician to the Prussian Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Medico-Military Inspector of the Arrondisement of Wilna.

For Sweden and Norway:

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

The minutes of the thirty-seventh meeting were read by Baron de Collongue and adopted.

The 3rd Section (chapter II) of the Report of the second Committee on the 3rd group was then read.

Dr. Mühlig informed the Conference that he was in a position to produce facts in support of the first conclusion, *viz.*, that isolation, wherever it could be applied to the first cases that marked the outbreak of an epidemic, was a measure of prudence, the adoption of which no country, having a regard for its safety, ought to neglect. During the epidemic which raged in Mecklenburg-Schwerin in 1859, in forty-two places the isolation of the first cases, combined with the employment of measures of disinfection, was proceeded with. In thirty-five of these places, complete success was obtained, and the epidemic did not develop itself; in seven other places, on the contrary, cholera could not be prevented from spreading. As, moreover, in twenty-one other places, there was no epidemic development, though nothing had been done to isolate the first cases, these facts evidently could not be considered as absolute proof of the efficacy of measures of isolation. Still, however, they appeared to him to demonstrate the utility of these measures.

Dr. Bartoletti remarked that the facts quoted by Dr. Mühlig proved that it would have been easy to increase the number of instances

given in the report. Dr. Bartoletti reminded the Conference, moreover, that the Mecklenburg epidemic was mentioned in the first chapter of the report.

Dr. Fauvel said that the report was in contradiction with the opinions admitted by the Conference, when it said that, in 1865, the epidemic would not have declared itself at Alexandria, thence invading the basin of the Mediterranean, if measures of complete isolation had been taken at Suez when the pilgrims carried cholera there from the Hedjaz. This, it was true, was simply a supposition, but the report ought not to have supposed that what was declared impossible by the Conference was possible. Now, it had formally denied that the complete isolation of the pilgrims at Suez was possible.

Dr. Sotto supported these remarks. The Conference had decided too categorically in this respect to permit of the retention of the passage to which attention had been drawn by Dr. Fauvel as it stood. As for the facts quoted by Dr. Mühlig, Dr. Sotto did not think them sufficiently conclusive. In a country like Mecklenburg, containing no more than 1,800 persons to a square mile, where the population was scattered, where towns and villages were rare and far apart from each other, frequently separated by *landes*, recourse might be had to measures of isolation, and good results expected, but that could not be so in more thickly peopled countries, where the same measures would be incapable of execution, as was the case in most countries in Europe.

Dr. Mühlig stated that he had made no attempt to exaggerate the bearing of the lessons to be deduced from the facts observed in Mecklenburg. Besides, the question there was only of isolation applied to the first cases made known in a locality attacked by cholera, and not—which was a very different thing—the isolation of an entire locality.

Count de Lallemand believed that one word would remove all objections. Instead of "admitting that measures of thorough isolation could have been *taken* at Suez," the words "could have been *possible* at Suez" could be substituted.

Dr. Bartoletti remarked that the whole thing was a simple supposition, and that, moreover, in the point of view of the principle isolation was always possible. He stated, however, that he consented to the modification proposed by Count de Lallemand.

Dr. Salem Bey reminded the Conference that the isolation of the first pilgrims returning from Mecca had this year been carried out successfully. A part of the pilgrims, who had arrived by the sea-route, had been detained and isolated at the Springs of Moses. Similarly, the caravan which had brought cholera with it as far as Sharafat, six stages from Suez, had first been placed in quarantine at Acaba, five stages from Suez, and afterwards, provisions failing at this place, at the Springs of Moses. The entire mass of the pilgrims, it was true, was not operated upon; but, after all, the isolation was complete, and the result obtained supported the conclusions of the report. Dr. Salem Bey

believed that the partial isolation of the pilgrims would be possible even at Suez.

Dr. Goodeve added that there were indeed, perhaps, few towns more easy to isolate than Suez, on account of its geographical position. Surrounded by deserts, this town was, so to speak, connected with the rest of Egypt only by the railway, which placed it in communication with Alexandria.

Dr. Fauvel did not think it was necessary to enter upon a discussion of this subject with Dr. Salem Bey. He would merely point out that what had just been said by himself and by Dr. Goodeve justified the criticisms of the report and the necessity of the modification agreed to by the Committee.

The 3rd Section, as modified, was adopted unanimously.

The 4th Section (chapter II) was read.

Dr. Sotto thought, with the Committee, that the interruption of communications was possible when the question was merely the extinction of cholera in a restricted focus, such as a house, a public establishment, or even a village. But as to having recourse to such means when a town, or, *à fortiori*, a canton, was in question, Dr. Sotto thought it was not to be dreamt of. The interruption of communications would for this reason be impracticable in most countries in Europe.

Dr. Bartoletti remarked that the report was the first to admit that the interruption of communications was an extraordinary measure, which could not be applied always and everywhere. Contrary to the opinion expressed by Dr. Sotto, there were cases, as at Tiberiad this year, in which an entire district had been successfully isolated. This instance, like those of the same nature that might be quoted, referred, it was true, to thinly-peopled countries where communications between the various centres of population were infrequent; but these were conditions that often occurred in various countries, as, for instance, in certain parts of Russia, as well as in Turkey.

Dr. Mühlig gave his approbation to the 3rd section, except as regarded one point, as to which he maintained a reservation. The Conference, which had declared that the interruption of communications was the sole means of preserving Europe when cholera existed in Egypt, could not admit that this restrictive means became, as was said in the report, impracticable and illusory after the development of the disease in a large commercial port.

Dr. Goodeve observed that the interruption of communications might be applied to certain countries in Europe, such as Italy and Spain, for instance, and even to the whole of Europe with reference to America as well as Egypt, if they were only to pay attention, as the Conference had done with reference to Egypt, to geographical conditions. Starting with this principle—which, however, it should be understood, he did not himself admit—the Committee ought, in this opinion, to have proposed the interruption of communications wherever the geographical situation allowed it.

Dr. Fauvel replied that the Conference had not meant to lay down a principle applicable everywhere. Reasoning as Dr. Goodeve had done, one would evidently arrive at impossible consequences. The Conference had taken great care to specify what it meant. Taking for its basis the fact that Egypt was a sort of defile, or strait, whence there was a great radiation on every side, it asked whether in such a circumscribed place, the communications could not be temporarily interrupted. But was there, in this respect, the slightest analogy between Egypt and countries like Spain or Italy, which, not to speak of their land frontiers, presented an immense extent of coast? Dr. Fauvel did not think that such a doctrine could be seriously upheld.

Dr. Fauvel, who concurred in Dr. Mühlig's reservation, also pointed out in the 4th section two expressions, which did not seem to him to be correct: 1*st*, the word *primitive* did not seem to him to be used in its true meaning; 2*nd*, the word *impracticable* excluded the word *illusory*. To ascertain whether isolation in certain conditions was an illusory measure, it must necessarily have been tried.

Professor Bosi quoted a fact in support of the conclusion of the Committee. The Italian Government had, by quite a recent measure, decreed the isolation of Pavia and of a certain number of places where the cholera had declared itself. Professor Bosi gave his entire approbation to the conclusion, which he thought very just, and which seemed to him to be capable of receiving application in a manner not anticipated in the report, as for instance, in the isolation of a *corps d' armée*.

Dr. Maccas replied to Dr. Goodeve that the Conference, in recommending the interruption of communications, whenever circumstances admitted of the rigorous execution of this measure, said implicitly that this means must be had recourse to when geographical conditions permitted of so doing.

Dr. Bartoletti, in reply to Dr. Fauvel, explained that by *primitive focus* the Committee had meant that place in a country where cholera made its first appearance. To take an example: When cholera was imported into Altenburg in 1865, that town became, with reference to Germany, a primitive focus, where it might have been possible to extinguish the disease. Dr. Bartoletti added that this part of the report had been already finished and printed, when the Conference discussed the question of the interruption of communications between Egypt and Europe. The Committee could not foresee what the decision of the Conference would be, and this explained the sort of contradiction that had been pointed out. It had also refrained from speaking about Egypt, because the consideration of the special measures to be taken with regard to that country had devolved upon the third Committee.

Dr. Salem Bey approved the reply made to the question forming the subject of the 4th section. The Committee had remained within the limits of the possible, while the Conference had plunged into theory, when it decided that communication could, and ought in certain cases to, be interrupted between Egypt and the basin of the Mediterranean.

The geographical considerations on which this decision was based seemed to Dr. Salem Bey to be valueless, and he persisted in denying that the measure in question was possible of application in practice.

Dr. Dickson explained that he had voted against this section because, except in some altogether special cases, he considered the interruption of communications to be a measure totally impracticable.

Dr. Bartoletti replied that, for all that, facts had been quoted in Committee which proved the contrary.

The 4th section was put to the vote, and adopted by a majority of 19 to 2.

Ayes:—M. Vetsera, Dr. Sotto, Count de Noidans, M. Monlau, Dr. Spadaro, Count de Lallemand (under reserve as to the remarks made by Dr. Mühlig and Dr. Fauvel), Dr. Fauvel (under the same reserve), M. Kalergi, Dr. Maccas, M. Vernoni, Professor Bosi, M. Keun, Dr. Millingen, Dr. Mühlig, (under the same reserve as Count de Lallemand and Dr. Fauvel), Dr. Pelikan, Dr. Bykow, Dr. Baron Hübsch, Dr. Bartoletti, and Dr. Salem Bey.

Noes:—Dr. Goodeve and Dr. Dickson.

The 5th section was then read.

Dr. Mühlig said he had no objections to the medical visit to which, as recommended by the report, emigrants should be subjected previous to embarkation; but he doubted whether it would prove an efficacious means of controlling their condition of health. It might be so with a disease manifesting itself, like the plague, for instance, by external signs. The visit would lead to the prevention of the embarkation of persons attacked by confirmed cholera, but how could it be verified whether an individual had or had not premonitory diarrhœa? Dr. Mühlig believed that the result to be attained would be arrived at sooner by requiring from each emigrant a certificate stating that, say for a week previous, no suspicious change had occurred in his health. As the additional note on measures of naval hygiene applicable in times of cholera recommended that emigrants should not be allowed to take passage on ships not built for the reception of passengers, Dr. Mühlig asked in conclusion, why the report had not mentioned this means among those it had recommended.

Dr. Fauvel blamed the Committee for not having made a sufficiently clear distinction between emigration by land and by sea. To prevent or restrict emigration by land in Europe was out of the question, but the thing was practicable so far as emigration by sea was concerned. He merely thought that, to a certain extent, the result would be best attained by direct means. Whatever might be done, the authorities of an infected locality would always be urged by an instinctive sentiment of self-preservation to favor emigration; and, on the other hand, the rules of embarkation would never be sufficiently strictly observed. In his opinion—and he regretted that this was not mentioned in the report—serious dependence could be placed for the restriction of emi-

gration only upon the regulations established by the countries that wished to preserve themselves, and which, with this object in view, would prevent any ship, not in proper condition, from entering their ports.

Dr. Monlau did not think that the conclusions of the Committee were a reply to the question it had to solve. The measures it recommended, good as they were as hygienic measures, were illusory when regarded as a means of restraining emigration.

Dr. Bartoletti replied that the Committee, in the absence of anything better, had appropriated the conclusions of the report of the Committee charged with the consideration of measures of hygiene, thinking that the application of these measures might, to a certain extent, contribute towards restricting emigration. As for the certificate mentioned by Dr. Mühlig, Dr. Bartoletti did not believe that, as a guarantee, it would be more efficacious than the medical visit. The embarkation of passengers on board trading ships was a case that was at present of such rare occurrence that the Committee had not thought it necessary to prevent it.

Dr. Sotto did not think that, looking to the results, there was any very great difference to be made between the medical visit and the certificate of good health. He was a warm partisan of the interruption of maritime communications, and he did not hesitate to declare that in that consisted the whole pith of the question, if it was desired to do anything serious and efficacious. At the same time, when Europe was in question, and though he approved of the distinction made by Dr. Fauvel, he did not believe in the possibility of restricting emigration by land. Dr. Sotto said he would vote for the conclusions of the report, though he had not much belief in the efficacy of the proposed measures.

Count de Lallemand remarked that the weakness of these measures was connected with the difficulty of limiting emigration.

Professor Bosi thought they would be compelled at length to regulate emigration by land to prevent the disorders sometimes occasioned by it, as, for instance, in Italy last year, and notably at Ancona.

The 5th section was put to the vote and adopted unanimously, with one exception, Dr. Millingen, who declined to vote.

The 6th section (chapter III, *lazarettos*) was read.

Dr. Mühlig would make a reservation regarding two points in this section: 1*st*.—It did not seem to him to be correct to say that a porous and alluvial soil was susceptible of becoming a receptacle of morbific germs: what should have been said was that a soil in these conditions was eminently favorable to the development of cholera. 2*nd*.—The passage referring to marshy soils, which were represented as adapted by their nature, under given circumstances, to impart activity to the evolution of the choleraic principle, seemed to Dr. Monlau to be liable to give rise to misconception; he would ask whether it could not be inferred from this conclusion that cholera, in our countries, could be generated spontaneously under certain conditions.

Dr. Bartoletti replied that this passage was based upon the generally accredited opinion that the emanations from a marshy soil, combined with the importation of the choleraic principle, could not but *increase the activity* of the epidemic development of cholera.

Dr. Goodeve said he was acquainted with no fact proving this indisputably. It had seemed to him, therefore, preferable that the report should not have said more than that it was necessary to avoid marshy soils, without giving any reasons for so doing, the remainder of the sentence being consequently eliminated.

Dr. Maccas explained that the Committee ought to recommend that marshy soils ought to be avoided for this one reason alone, that they were of a contrary nature to rocky, granitic formations, which were admitted by all to be what ought preferentially to be selected in determining the site of a lazaretto.

The 7th section was read, but the discussion, on account of the lateness of the hour, was postponed to the next meeting.

The meeting terminated at 4-30 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE, DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 40, OF THE 20TH SEPTEMBER 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its fortieth meeting at Galata-Serai at noon of the 20th September 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Medical Attaché to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Denmark:

Chevalier Dumreicher, Consul-General to His Majesty the King of Denmark at Alexandria.

For Spain:

Dr. Monlau, Member of the Superior Spanish Council of Health.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d' Affaires.

For Prussia:

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Prussian Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Medico-Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation at Constantinople.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor at the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi read the minutes of the last meeting but one, No. 38 of the 17th September. They were unanimously adopted.

The order of the day being the continuation of the discussion of the report of the second Committee, His Excellency the President called upon M. Bartoletti, the reporter, to speak.

M. Bartoletti reminded the Conference that at the last meeting the report had been read as far as page 20. The discussion should commence with the seventh article of the third chapter, the heading of which was "Question of Lazarettos."

On the proposition of M. Mühlig, it was decided to discuss this chapter paragraph by paragraph.

M. Monlau said he had some observations to make regarding the 7th article.

In the construction of lazarettos, he said, the hygieist should have in view not only the architecture of the building, but also the site on which it was built. This site, regarded in a hygienic and æsthetic point of view, ought to be embellished with plantations of trees and a garden. Hitherto, lazarettos had been as dismal as prisons; it was a matter of importance, in his opinion, that sojourn there should be rendered as little dull and tiresome as possible, and they might easily be made more lively and agreeable by the adoption of plantations of trees all round or near the building. This was a very important point, and M. Monlau very strongly recommends that it should be taken into the serious consideration of the Conference.

M. Fauvel did not deny the advantages of plantations or gardens, but he believed it would be difficult to have everything. What was of by far the greatest importance was the security of the public health. Starting with this principle, the Committee had very carefully considered the conditions necessary to render lazarettos healthy. Now, the conditions which it believed it should specify, and the nature of the site, the selection of which it had recommended, could not, in M. Fauvel's opinion, be combined with plantations. In fact, he remarked, the Committee had laid it down that it was necessary above all to give

the preference to desert isles. These desert isles, it could easily be understood, could only be arid, rocky, sterile isles, without any vegetation. How, then, could they be adorned, in accordance with M. Monlau's views, with gardens and plantations of trees?

M. Maccas remarked that the Committee had confined itself to enunciating and specifying everything it had deemed indispensible to a good lazaretto. If it had not mentioned gardens and plantations, it was not because it had rejected them or excluded them as being useless or of no advantage, but simply because it had not deemed them absolutely necessary.

Dr. Goodeve protested against the proposal of the report that quarantine should be performed in huts, and especially in tents. Dr. Goodeve altogether failed to perceive the advantages attributed to them by the Committee, and he did not believe that they could be preferable to masonry constructions. In opposition to what was said in the report, Dr. Goodeve thought that, in the East especially, it would be very dangerous to pass a hot season under tents. Dr. Goodeve was of opinion that it was absolutely necessary to build houses, or, adopting the Indian system of quartering soldiers, to erect large huts, which might secure their occupants from the heat of the sun in torrid climes, such as that of the Red Sea. It should not be forgotten, he said, that, among the persons in quarantine, there would be many persons from northern countries who were not accustomed to the heat of the sun.

Dr. Bartoletti remarked to Dr. Goodeve that encampment under tents was perfectly suited to the habits of the people of the East. He knew that by experience, having been in hot countries traversed by pilgrims. At Bagdad, for instance, where the temperature was very elevated, he had seen all the pilgrims encamped under tents, and they did so throughout Mesopotamia, where he had passed many months. Towards the Hedjaz, added M. Bartoletti, the pilgrims on their travels always lived in the open air, and masonry buildings did not exist there. M. Bartoletti was of opinion that, in the East especially, encampment in tents was easier and more advantageous than living in houses. Those who were acquainted with the habits of the pilgrims could not doubt that they would always prefer encamping in tents.

Dr. Salem Bey was also of the same opinion as the Committee. The pilgrims, he said, preferred encamping in tents; it was a habit of theirs, and their habits scarcely adapted them for life in common. These tents, especially those belonging to the wealthy and comfortable classes, offered every desirable condition of security against the sun.

M. Bykow believed that Dr. Goodeve's remarks were in opposition to what was done in India. During the prevalence of epidemics, he said the barracks were evacuated, and tents pitched for the soldiers. Therefore the preference was given in India also to tents.

Dr. Goodeve confessed that that was the practice in India, but it was so because it was necessary to empty the barracks to purify them, and

the soldiers were made to change their camping ground every two or three days; there were no other means of sheltering them, except under tents. It could be imagined, said Dr. Goodeve, that it would be impossible to improvise, at a day's warning, constructions in masonry or wood for the shelter of the soldiers as soon as they left the barracks. This, therefore, was a necessity which could scarcely serve as a rule or law.

M. Sawas referred to the proposition of M. Monlau, with the object of calling the earnest attention of the Conference to the fate of the persons in quarantine. He knew by experience what a stay at a lazaretto was; he had had frequent opportunities of being a close observer of their melancholy and ennui, the privations they had to endure during their stay in these places, which were worse than prisons in their dreary monotony; and he considered that it was of the highest importance that the system should be changed—those who had to perform quarantine being recommended to the solicitude of governments. The desolate condition of the lazarettos of the countries which last year succeeded, thanks to severe measures, in preserving themselves from cholera, was known by experience, and had often been brought to notice in the newspapers. To solace the occupants of a lazaretto, the sick, and the convalescent, was a task of the highest humanity, and worthy of occupying an essentially humanitarian assembly like the Conference. As to the question of gardens, M. Sawas did not think they were beneath the notice of the Conference or unimportant; and as for the difficulty of establishing them, he did not consider it insurmountable,—witness the public garden at Malta.

After these remarks, article 7, as far as the first paragraph, was put to the vote and adopted unanimously, M. Monlau and Dr. Goodeve voting under reserve.

With reference to the 1st paragraph, M. Fauvel wished to know whether the Committee had entertained the idea of tracing a plan of architecture, a species of type for the construction of lazarettos. According to the description it gave of them, and the details into which it entered, it would appear that such was its idea. It divided each house into four compartments, enumerated the windows, and determined the distance that should exist between each house. All that led to the belief, he said, that it wished to present a model; for if that was not its intention, it had gone too much into detail. Why four compartments, and no more? Why a distance of 20 mètres between each house, and 100 mètres between each range of houses? What was the reason of all that, and what was the system of the Committee? M. Fauvel was of opinion that the Committee should have confined itself to laying down principles, leaving to the architects the care of giving to the building the best distribution possible.

M. Bartoletti replied to M. Fauvel that the Committee had taken for its point of departure the minimum fixed by the Conference as the distance to be kept between the quarters of the persons in quarantine (*see* the 13th chapter of the General Report). The Committee had not pretended to propose a type, and it had contented itself with indicating

certain indispensible conditions. If it had spoken of four compartments, it had not said that there might not be more if necessary. It had believed that four compartments were necessary properly to separate and isolate the different categories of persons in quarantine in little groups, and then to separate into larger groups the different classes of sick from among the various groups.

M. Maccas added some words to the explanations given by M. Bartoletti, with the object of distinctly showing the principal idea by which the Committee had been guided in the plan it had traced. This plan had not been proposed as a type, and the Committee had had no other intention but that of giving an example of the building to be used as a lazaretto. In laying down the bases of the building, the Committee had had chiefly in view the complete separation of different arrivals, a separation which could not offer very serious guarantees if sufficient space were not left between the different classes of arrivals, so that the disease could in no case spread from group to group. This was the object with which the principal divisions had been established. Twenty mètres, the Committee thought, could perfectly guarantee the smaller groups.

Dr. Goodeve asked whether these divisions would be maintained, by barred partitions, or by any other solid barrier.

M. Maccas said that the Committee believed that guards *ad hoc*, who would be obliged to follow the persons in quarantine always and everywhere, could prevent all communication between the different groups.

M. Fauvel remarked that, under such circumstances, the surveillance of guards could not afford sufficient guarantees. M. Fauvel recommended the erection of solid, and at the same time agreeable barriers.

Dr. Goodeve made another remark. He thought it was important and necessary to indicate how many cubic feet of space should be given to each person in quarantine.

M. Fauvel said he also thought this was necessary, and he proposed that a minimum number of cubic feet should be fixed for each person in quarantine.

M. Maccas believed that hygiene had already established the number of cubic feet necessary for each person in quarantine, and the maximum would be allowed them.

On the motion of Dr. Goodeve, seconded by Dr. Dickson and Dr. Fauvel, it was decided to fix the minimum space for each person in quarantine at 10 square feet, and 15 feet in height. Each person in quarantine would thus be allowed 1,500 cubic feet.

The first paragraph was put to the vote and adopted unanimously, the reservations of which notice had been given being maintained.

M. Mühlig wished to make some remarks regarding the second paragraph. The hospital, it was said in the report, would be divided

into two compartments, one of which should be reserved for cholera patients, and the other for persons suffering from simple diarrhœa.

M. Mühlig was of opinion that, in addition to the cholera hospital, a hospital of observation should be established within the precincts of the lazaretto, but far from this building. It would be imprudent, he thought, to send a patient, on mere suspicion, to the cholera hospital unless the choleraic diarrhœa was quite distinct.

To this M. Bartoletti replied that it had already been fixed in the report that the hospital ought to have two compartments,—one for confirmed cholera, the other for diarrhœas. If the diarrhœa, he remarked, had been duly found to exist, the patient should immediately be conveyed to the cholera compartment.

M. Mühlig remarked that it was not probable that it would always be possible to ascertain at its outset the presence of diarrhœa among the persons in quarantine, who would endeavour to conceal it. It was necessary then to have, for persons suspected as suffering from diarrhœa, a special place where they would be subjected to more attentive medical observation. They would not be sent to either the cholera or diarrhœa hospital until it became perfectly certain that the suspected diarrhœa really existed. If, on the one hand, said M. Mühlig, it was dangerous to have among the persons in quarantine any who were suspected of having the disease, it would, on the other, be cruel to thrust them, on mere suspicion, into the midst of a choleraic focus. It was for this reason that he had proposed a hospital of observation within the limits of the lazaretto, and distant from the cholera hospital.

Dr. Goodeve also showed that it was absolutely necessary to establish a convalescent hospital far away from the cholera hospital. Those who commenced to recover from the disease could no longer continue without danger to live among cholera patients. It was also necessary to erect another hospital for all other infectious diseases.

In the opinion of M. Maccas, the remarks made by M. Mühlig and Dr. Goodeve were refuted in the text of the report. The hospital, it was there said, ought to have two principal compartments, but there would also, according to the report, be many separate houses. The Committee, M. Maccas remarked, had indicated the most important point, *viz.*, the separation of cholera from non-cholera patients. It had believed that it was useless to say more.

M. Bykow proposed that there should be three principal compartments: 1*st*, for cholera patients; 2*nd*, for patients suffering from diarrhœa; 3*rd*, for all other diseases. Doubtful cases of diarrhœa might be maintained under observation in a separate place in the last compartment.

M. Mühlig remarked that the object of the Conference would not be attained by dividing a single edifice into many compartments, for then all sorts of patients would be placed in one and the same building. Now, it was necessary that non-choleraic patients should be separated as much as possible from patients suffering from cholera, and that they

should not be allowed to breathe the same atmosphere. This separation, M. Mühlig was of opinion, could never be attained by simple partitions.

Dr. Dickson did not think a convalescent hospital was indispensible, because the convalescents might, without any danger, be placed in one of the houses attached to the hospital. Dr. Dickson considered that the more important point to be considered was the establishment of two distinct hospitals,—one for cholera, and the other for non-cholera patients.

His Excellency the President put the second paragraph to the vote. It was adopted unanimously, the reserves of which notice had been given being maintained.

Paragraphs 3 and 4 were adopted unanimously.

With regard to the 5th paragraph, in which it was said that the rent of the quarters in each of the three classes should be fixed by a rule, and should vary according to class, Dr. Goodeve remarked that paupers were frequently found among the persons in quarantine. Not having the money, how could they be made to pay? Dr. Goodeve proposed that for this class of persons, a portion of the huts might be set apart free of charge.

Besides, said Dr. Goodeve, if it were desired to fix three different rates of charges, it would be necessary also to set up three very different kinds of quarters corresponding to the rents paid.

M. Moulau seconded Dr. Goodeve's motion regarding the paupers. He added that to establish three classes of persons, as was proposed, it was necessary that this distinction into three classes should also bear upon the three categories of persons in quarantine, each of which should be kept separate from the others.

M. Bartoletti, in reply to Dr. Goodeve, said that it was understood, if not expressed, that the quarters would be more or less comfortable in accordance with the rates paid. These three classes of quarters would remain the same, in the matter of structure, for all classes of persons in quarantine.

M. Kalergi was of opinion that it would be well to strike out this paragraph. As it was not hygiene, he said, that required the three classes of quarters, and as the matter would depend upon the authorities or Governments, who would preside over the construction of these quarters, the Conference had nothing to say upon the question, which was beyond its competence.

M. Dumreicher believed that nothing more should be done than to fix the maximum charge to be paid by each person in quarantine, having regard to the space and the indispensible conveniences offered to him. For the wealthy, and those who were in tolerably good circumstances, and who might wish to surround themselves with many comforts and luxuries—of course, within the limits of the means of the place,—there ought to be a separate tariff, which should fix the surplus to

be paid for the extra articles with which they wished to provide themselves.

M. Sawas desired that it should be very clearly expressed that the indigent would be lodged gratis.

The President put the 5th paragraph to the vote. It was adopted unanimously (with the reserves noticed), and with the exception of M. Dumreicher, who declined to vote.

M. Fauvel asked for an explanation regarding the 6th paragraph. He wished to know exactly what the Committee meant by the word *hotellerie?* Was it an inn, a restaurant, to which people could go to eat, drink, and lodge? He did not think so, for that would expose the persons in quarantine, whom it was most important to keep separate and isolated, to very great dangers. These dangers would inevitably result from the frequency of communications between the different classes of persons in quarantine. It was known that at Pesth communications of this sort had been the great means of contagion. M. Fauvel understood that there was a store-house, an establishment furnished with provisions where each man might buy his own supplies. But in this case there would be no question of an inn: this establishment would be like those that were known as canteens. In his opinion, no person in quarantine should be permitted to enter the inn.

M. Sawas believed that the report had not omitted to give the definition of the word "inn," and the Committee, he thought, had expressed itself very clearly upon the subject. It was an establishment, whether it was called inn or canteen mattered very little, where the persons in quarantine would find everything they wanted in the shape of supplies. The Committee, he added, had been careful to direct that the servants of the inn should in no case be allowed to enter into communication with the persons undergoing quarantine.

M. Bartoletti furnished some explanations in this matter. The Committee, he said, meant by the word inn an establishment which could furnish, prepare, and serve such provisions as were required by the persons in quarantine. These establishments had always existed in Europe, where restaurants, situated beyond the limits of lazarettos, furnished the persons in quarantine with all they needed. The business was so conducted, that none of the servants had any communication with the persons in quarantine. In the East, too, restaurants outside the lazaretto, or even *bachals*, would not fail, moved by the spirit of speculation, to establish indirect communications with the persons in quarantine.

Dr. Goodeve did not understand that establishments like those that had just been mentioned by M. Bartoletti could furnish the persons in quarantine with all they wanted. At most, these establishments could only establish communications with persons who were well off; but, in regard to the poor, who would find it impossible to open communications with outside, it would be absolutely necessary to supply them with provisions by means of bazars or stores established inside

the lazaretto. Besides, Dr. Goodeve had learnt at the Dardanelles and elsewhere that in Eastern lazarettos there were very frequently persons who had not the means of providing for their own support. It would be necessary, therefore, he thought, that the other persons in quarantine should not be burthened with the expense of their maintenance, and that what was strictly necessary for them should be supplied by Government.

The Committee, said Dr. Bartoletti, had a while ago been blamed for having gone too much into detail, and now it was blamed for not having said enough. The Committee, knowing that everything that could be added was entirely within the competence of Governments, did not care to enter upon superfluous details in its report.

M. Maccas believed that the fear expressed by M. Fauvel regarding the communications that might be opened between the persons in quarantine and the hotel servants was needless, considering that, in the report, all such communication was strictly prohibited.

As for the bazars proposed by Dr. Goodeve, said M. Maccas, that was a matter of detail with which the Committee could scarcely deal, it being entirely a matter of speculation by traders, who could set them up if they thought the speculation would be profitable, in virtue of special authority from the local Government, which would have every interest in providing for the maintenance of the poor.

Dr. Goodeve remarked to M. Maccas that the duty of the Conference was to seek all means capable of rendering a stay in a lazaretto as commodious and agreeable as possible. It should, therefore, carefully remove all injurious elements. To abandon these establishments to the spirit of commerce would be exposing the poor to very hard conditions. The lazaretto that was to be established at Bab-el-Mandeb, and which would in great part be occupied by paupers and indigent people who would probably like to cook such cheap victuals as they could afford to buy in the vessels with which they were all furnished, would not accord with the system recommended.

In M. Bykow's opinion, it would be sufficient to say that the lazaretto would be furnished with provisions, and that the persons in quarantine would not enter into communication with those who furnished them.

M. Mühlig also expressed himself to the same effect. It was very important, he said, to exclude bazars from the precincts of lazarettos, for the resultant dangers would be numerous and incessant. Storehouses, furnished with supplies for all classes of persons in quarantine, might be established outside lazarettos, in which a sojourn should be made as agreeable as possible consistent with the necessary guarantees.

M. Sawas wished to ask whether Dr. Goodeve, whose notion certainly was not the establishment of a centre of commerce inside lazarettos, but to help the poor by means of bazars of provisions, organised by the local authorities, had weighed all the inconveniences and difficulties in the way of the poor cooking their own victuals separately. These

difficulties, he said, were as numerous in lazarettos as in prisons; there was, therefore, no ground for thinking of giving the poor the facilities alluded to for cooking. They had only to forget their cooking-pots during their stay in the lazaretto, and they ought to be satisfied if they were able to get such provisions as they strictly needed cheap.

M. Monlau thought it necessary to determine also the quality of the provisions intended for the persons in quarantine. The nourishment afforded in lazarettos was, in his opinion, a most important matter, for there were alimentary substances, the use of which it was necessary to prohibit during the prevalence of an epidemic.

Dr. Dickson believed that it would also be necessary to take some measures in regard to the deaths that might take place in the lazaretto. The report said nothing about the burial-ground.

M. Stenersen considered that all these details were superfluous. He remarked to M. Monlau that if it were desired to proceed in accordance with his system, it would be necessary to say also that persons undergoing quarantine should wear flannel and things of a similar nature.

After some other remarks and explanations, it was decided to put the 6th paragraph to the vote.

It was adopted unanimously, with some reservations.

The 7th paragraph was put to the vote, and adopted unanimously.

With regard to the 8th paragraph, M. Monlau mentioned that a lacuna existed. There was no mention made of the strict watch to be kept up over ships in quarantine. Such watch, in his opinion, was absolutely necessary, having regard to the sanitary and commercial contraband practices carried on in many lazarettos. M. Monlau did not require that a blockade should be placed upon ships in quarantine, but he thought it was necessary to keep up strict watch in the direction of the sea. The quarantine system was nothing if not severe.

M. Bartoletti thought M. Monlau's observation was quite correct, but he thought at the same time that it was out of place, considering that the paragraph in question related only to the interior of lazarettos.

The eighth paragraph was put to the vote and adopted unanimously.

The ninth paragraph was put to the vote. After a remark from Dr. Fauvel to the effect that he wished it were said that two landing places *at least* were necessary for each lazaretto, it was adopted unanimously.

Several members expressed their intention to speak with reference to the tenth paragraph.

M. Pelikan believed that parlors were indispensable for certain exceptional cases, certain criminal cases, for instance. He was in favor, therefore, of the maintenance of parlors, but he was of opinion that ordinary visits should be as greatly restricted as possible.

M. Monlau was of opinion that it would be almost impossible to do away with parlors, and prohibit visits. He thought that the reasons militating in favor of the suppression of parlors, and the prohibition of visits, had been exaggerated, and he was of opinion that they might be maintained without inconvenience.

M. Maccas informed the Conference that in Committee he had concurred in M. Pelikan's opinion, and that, by mistake, his name had not been placed in the report alongside that of his colleague. Although, said M. Maccas, he was for the greatest severity in regard to quarantine, he did not think it was possible to do away with parlors altogether.

Dr. Dickson stated that he had been one of those who had disputed the utility of parlors, which he considered to be very dangerous, because he thought it would be impossible to fix the disease within certain limits while they existed. He, therefore, proposed their suppression; and, in exceptional cases, the persons undergoing quarantine might, in his opinion, converse with strangers under the surveillance of the authorities of the lazaretto.

Dr. Goodeve considered that parlors ought to be maintained, because, to his thinking, they could present no danger whatever if certain precautionary rules were observed, as also certain conditions of surveillance, which could easily be instituted.

M. Bosi expressed himself to the same effect as Dr. Dickson, whose ideas, he said, were those of most of the members of the Committee. He added that as transmission could be effected through atmospheric channels, any precautions that might be adopted would be insufficient if a suspicious person were approached. Gentlemen had spoken of cruelty, but it would be very much more cruel to expose a healthy man to contract cholera, than to prevent him from speaking to strangers.

M. Sotto also considered parlors as indispensible. There were many circumstances, he said, which rendered them necessary; and as he failed to perceive the inconveniences attributed to them, he would vote in favor of their maintenance.

M. Bartoletti entered upon some explanations with reference to this point.

The predominating idea in this article, he said, was isolation. According to the views entertained by the majority of the Committee, the suppression of parlors had been advised, in order that visitors might not be compromised, and the propagation of cholera favored.

M. Monlau supported M. Bartoletti. Survey and search, he said, were always effected by persons who were not in a suspicious condition approaching those who were so. This communication had never, so far as he was aware, produced any inconvenience, and he was not aware of any instance of transmission through the atmosphere, either with reference to the plague, the yellow fever, or cholera.

Dr. Bartoletti remarked to M. Monlau that his opinion was given somewhat too decisively: he would like to know whether he had documents in support of it.

M. Maccas reminded the Conference that the lazarettos were to be established in an uninhabited island, or in a place far removed from any town. Communications, therefore, between a town and a lazaretto could be neither frequent nor easy. As parlors, added M. Maccas, had been maintained hitherto, there must have been strong reasons in their favor. It should be reflected also that cholera was transmissible only to a certain distance, and by means of a confined atmosphere. Parlors should, therefore, be established in the open air, and the distance should be fixed at which a person in quarantine could converse with a visitor, and thus a full and complete guarantee would be obtained.

M. Keun was against the maintenance of parlors. He quoted a circumstance that had occurred at Smyrna during the last epidemic of cholera. After two or three cases had occurred in the lazaretto, the disease having, two days afterwards, spread to the town, the general opinion attributed this propagation to a person who had previously visited the lazaretto parlor. M. Keun was of opinion that it would be useless, and even dangerous, to maintain parlors.

At the request of several members, His Excellency the President put the 10th paragraph to the vote.

It was adopted unanimously with the reservations above noticed.

The meeting terminated at 4-30 P. M.

Order of the day for the next meeting.

Continuation of the discussion of the report of the 2nd Committee.

SALIH,

President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 41, OF THE 22ND SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its forty-first meeting at Galata-Serai on the 22nd September 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Medical Attaché in the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Spain :

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States :

Dr. Ignace Spadaro.

For France :

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain :

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece :

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy :

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

For the Netherlands :

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Prussia :

Dr. Mühlig, Physician to the Prussian Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia :

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Medico-Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to the Swedish Legation at Constantinople.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

The minutes of the thirty-ninth meeting were read by Baron de Collongue and adopted.

Dr. Sawas said that, if he could have attended that meeting, he would have voted, like Dr. Goodeve and Dr. Dickson, against the 4th section of the report—*temporory interruption of communications, &c.*

The discussion was resumed, where it had been broken off at the termination of the last meeting, *viz.*, at paragraph 11 of the 7th section (chapter III).

Dr. Bykow said he did not admit that living animals could transmit cholera to men, and therefore did not believe it to be necessary to subject them to measures of purification, and consequently to establish stables and cattle-sheds for their reception in lazarettos.

Dr. Sotto thought that the report did not go sufficiently into detail regarding the measures to which living animals should be subjected in lazarettos. This was an important question upon which, it seemed to him, it was necessary to throw light.

Dr. Millingen could not see any reason for retaining living animals, if it was found that nobody was acquainted with any facts proving that they might become agents of transmission.

Dr. Bartoletti replied that the subject of the paragraph under discussion was merely the locality—the enclosures—necessary to be reserved in every lazaretto for living animals. The question of the measures of precaution to be taken with respect to them was treated of further on in another chapter of the report.

Paragraph 11 was put to the vote and adopted unanimously, with one exception, Dr. Millingen, who voted against it.

Dr. Monlau thought that the Committee passed too rapidly over the question of latrines, which question was the subject of the 12th paragraph. The preference being given to level ground in the construction of lazarettos, and it being granted too that hundreds of persons might occupy the lazaretto at the same time, Dr. Monlau believed that the establishment of movable cesspits would meet great difficulties. It seemed to him that it would be preferable if each person in quarantine were allowed a separate vessel, and also that the excrementitious matter should be thrown into the sea, rather than buried, as recommended by the Committee, which would have the serious disadvantage of infecting the soil.

Dr. Bartoletti replied that it was after long discussions that the Committee had given the preference to the system of movable cesspits. The use of special vessels,—one to each person, which was good in a hospital,—presented difficulties in a lazaretto in precise proportion to the large number of persons in quarantine. The neutralisation of excrementitious matter, on the other hand, was easier and more certain in movable cesspits previously charged with disinfecting substances. The excrementitious matter being finally disinfected and neutralised, it might without danger be buried in the soil.

Paragraph 12 was put to the vote and unanimously adopted.

Dr. Mühlig said he did not dispute the system of classes (paragraph 13) as understood by the Committee: he would only ask to what extent the system, which was good in principle, could be applied in practice. Strictly, and pushing it to its most extreme consequences, it would be necessary to separate the arrivals of each day and by each ship, classing them even according to the degree of suspicion. Now, this was clearly possible only within certain limits. Dr. Mühlig was of opinion that three classes might be established, the first including arrivals on board ships having, or having had, sickness on board; the second, those arriving on board ships having had no sickness on board during the voyage, but whose passage was short, less than fifteen or sixteen days for instance; the third, those arriving by ships also having had no accidents on board, but having occupied a longer number of days than just mentioned in their passage.

Dr. Bartoletti explained that the Committee had only shown the bases of separation into classes. It was properly left to the sanitary authorities to work out the separation. The arrangement of the lazarettos, as recommended by the Committee, would furnish them with the means.

The 13th paragraph was put to the vote and unanimously adopted.

Dr. Mühlig did not think that three physicians would be sufficient for each lazaretto, as proposed by the Committee in the 14th paragraph. Four at least were required to provide against one being rendered inefficient by accident.

Dr. Goodeve, on the contrary, thought that two would be enough in certain lazarettos of minor importance.

Dr. Fauvel would prefer that no figure should be fixed. The matter was one for decision by the sanitary authorities, whose duty it was to see that every lazaretto was provided with the necessary number of physicians for the due performance of the various functions indicated by the Conference.

Dr. Bartoletti said that the Committee had understood the matter in that light.

The 14th paragraph was put to the vote and adopted unanimously.

Dr. Dickson again called the attention of the Conference to the question of cemeteries in lazarettos. No mention was made of them in the report, nor was any allusion made to the place to be reserved for depositing corpses previous to burial : this he thought was an omission which should not be allowed to exist.

Dr. Bartoletti remarked that a cemetery existed in all lazarettos, and especially in Turkey.

Dr. Dickson's remark that there should be in every lazaretto, or its dependencies, a suitable place for inhumations, having been deemed well founded, the Conference decided that it should be recorded in the minutes.

The 8th section having been read, Dr. Mühlig said that, though it was not expressly so stated, it ought to be understood that lazarettos of observation ought to be placed at a proper distance from dwellings.

M. Stenersen reminded the Conference that the Committee had said once for all that all lazarettos should be constructed upon an island, or, if that were not possible, in a place several miles distant from any dwelling.

The Committee having admitted, according to the system followed in certain countries, three classes of quarantine establishments, *viz.*, lazarettos for the rigorous quarantine, lazarettos for the quarantine of observation, and lastly, stations, the object of which was simply to control arrivals and to attach a *visa* to bills of health, Dr. Bykow, after having stated that nothing was said about the matter in the report, asked what was the opinion of the Committee regarding establishments of the 3rd class.

Dr. Fauvel did not deny the distinction established in the report between principal or rigorous quarantines, and lazarettos of observation, but he asked what were the attributes of each.

Where ships, which, though carrying a foul bill of health, would be placed in quarantine of observation—and, in Dr. Fauvel's opinion, this would be the general rule, while the rigorous quarantine would become the exception—to be received into lazarettos of observation ; or, merely because they might be carrying foul bills of health, were they always to be compelled to undergo quarantine in a principal lazaretto ? A ship did not always know to what species of quarantine she was about to be subjected ; and she might even, when possessing no physician on board, be ignorant that cholera existed in her ; she might then—

and if the bill did not form the rule—be refused entrance on presenting herself before a lazaretto of observation. And, as the obligation under which the ship would in this case be of proceeding to perform quarantine in a principal lazaretto, often very distant, might be the cause of serious prejudice to the vessel, Dr. Fauvel believed that it was necessary to make arrangements, so that such errors could not happen; and, for this reason, it seemed to him that the question required to be cleared up.

Dr. Bartoletti replied that every ship under a foul bill of health would have to perform quarantine in a principal lazaretto, unless when there was a physician on board, and when no cases of cholera had occurred during the voyage. In this case the duration of the voyage was deducted from that of the quarantine; but this was the only exception to the rule. However, these were questions that could not be settled until the Conference should discuss that of the duration of quarantines.

Dr. Maccas remarked that the 3rd paragraph of page 21 was the best definition that could be given of lazarettos of observation, and of the part they were intended to perform. It was said there that they were intended for the performance of the quarantine of certain arrivals under clean bills of health, for keeping which under suspicion reasons might exist; this alone proved that ships under foul bills were not admitted to them. Dr. Maccas said that this was one of the chief points on which there had been a difference of opinion in Committee, some members desiring that there should be no exception to the rule.

Dr. Goodeve asked what was the use of lazarettos of observation if it were admitted that the quarantine of observations might be performed even on board ships.

Dr. Dickson only understood one kind of lazaretto, *viz.*, lazarettos intended for ships under foul bills. The lazaretto of observation corresponded with the suspicious bill; it was an imaginary creation which could not exist in reality; it was, in short, nothing but an expression applied to the *arrival*, and in no way to the *locality*, and serving to indicate the places in which ships under *clean* bills should be subjected to a quarantine of observation.

Dr. Bartoletti replied to Dr. Goodeve that the lazaretto of observation was a convenience for the passengers who might have reasons for preferring to perform their quarantine on shore rather than on board. The disembarkation of the passengers might also sometimes be necessary, if there were crowding in the ships subjected to observation.

Dr. Sawas thought that Dr. Fauvel's remarks supported the distinction drawn by the Committee between the various kinds of lazarettos. As these questions would all have to come up again, as had been remarked by Dr. Bartoletti, for the present the letter of the report should be held to.

The discussion of this part of the report being adjourned in consequence of this remark, the Conference proceeded to the discussion of the 9th section, which was read as far as the conclusions.

Dr. Fauvel said he wished to know what the Committee meant by a restricted international lazaretto. The lazaretto of Kanzoë was spoken of: what was the difference between this establishment and ordinary lazarettos? were only ships under the flags of Sweden, Russia, Prussia, Mecklenburg, and Denmark, admitted to it?

M. Stenersen replied that a ship performing quarantine at Kanzoë was admitted to pratique in the ports of all the contracting States. Every ship was admitted, without reference to its destination, to perform quarantine at Kanzoë: only, if a ship's destination was not a Russian, Prussian, Danish, Mecklenburg or Swedish port, it was possible that she might reap no benefit from this quarantine, having to perform it over again.

Dr. Sawas remarked that an establishment like that at Kanzoë might render great services to maritime commerce, as certain States refused, contrary to the established rule, to look upon any quarantine as having been performed, unless it was undergone in their own lazarettos. The Committee, though it decided against international lazarettos administered in common, thought, for this reason, that it ought to recommend international lazarettos in a more restricted sense, such lazarettos, in short, as the establishment at Kanzoë.

The quarantine performed in these lazarettos, the administration of which would be left to the territorial Government, would be admitted by all the contracting Powers, which would distinguish them from ordinary lazarettos, and shipping interests would not have to support the losses caused by the double and triple quarantines to which they were sometimes exposed.

In the opinion of Dr. Maccas, restricted international lazarettos would be sanitary establishments administered, as had been said, by the agents of the territorial power, but under the control of a Commission composed of Delegates from all the contracting States.

Dr. Fauvel disputed the value of the arguments on which the Committee rested in rejecting the system of international lazarettos: 1*st*.—Why should there be any conflict of opinion and authority between the representatives of the Governments interested; would not their decisions be those of the majority, as in all mixed assemblies? 2*nd*.—Was not the objection drawn from the prejudice caused to navigation by the obligation imposed on ships to perform quarantine in a more or less remote place, sometimes out of the route pursued by them, applicable to the principal lazarettos, the number of which also would be restricted? 3*rd*.—Independently of the known fact that a lazaretto never had become a focus of infection, would crowding, for the reason already given, be more to be dreaded in international than in principal lazarettos? 4*th*, and finally.—How could there be any infringement upon the sovereign rights of the territorial authorities if the international lazaretto were to exist only in virtue of an understanding between the various Governments?

In the opinion of Dr. Fauvel, who stated that he was not a partisan of the system of international lazarettos, except where special

circumstances rendered its necessity evident, as, *e. g.*, at the entrance to the Red Sea, the best argument to offer against the establishment of the system would consist only in the immense majority of the cases in which it would not be necessary.

Count de Lallemand and M. Kalergi concurred in these remarks.

Dr. Sawas replied that, whatever Dr. Fauvel might say, it might very easily happen that the agents of the powers interested, who would share amongst them the various departments of a truly international lazaretto, *i. e.*, one administered in common, could not succeed in coming to a common understanding. On the other hand, few in number as the principal lazarettos might be, they would always be more numerous than international lazarettos; it was, therefore, represented, and not without reason, that the latter were of necessity a cause of injury to ships forced to proceed to them; and it was represented that a dread existed of the enormous number of persons who might be accumulated together at a time undergoing quarantine. Could it be asserted that the mutual consent necessary for the establishment of an international lazaretto could possibly be obtained from the various Governments? This was a question which could not be prejudged. After having stated that Dr. Fauvel's objections had not diminished, as he believed he had shown, the value of the reasons urged by the Committee, Dr. Sawas said he was in favor of maintaining the conclusions of the report.

Dr. Bartoletti stated that in his quality of a Delegate of the Ottoman Government, he was opposed to the principle of international lazarettos. He believed, moreover, that he could make this declaration without placing himself in contradiction with the resolutions of the Conference relative to the utility of an international establishment at the entrance of the Red Sea. The question at present was being discussed in a general point of view, which did not exclude exceptions.

Dr. Monlau, who had been the first to suggest the idea of international lazarettos, persisted in his belief that good results might be expected from them. Lazarettos established according to the present system could not be depended upon, and it was only with the concurrence of every State that any hope could be entertained of imparting to them such improvements and amendments as were indispensible. For instance, certain model international lazarettos should be established at the mouth of each sea, or of the principal gulfs, at which ships should undergo quarantine during the existence of cholera. The advantages that would result from the adoption of this new system, which might at any rate be tried, would amply compensate, he thought, for the inconveniences that had been pointed out.

M. Stenersen remarked that the Committee had been the first to admit that lazarettos, as they existed, were capable of great improvements, only it had believed that these improvements were possible without having recourse to the system of international lazarettos.

Dr. Millingen asked the detractors of the system of international lazarettos how they would regulate the sanitary practice observed in the

Danube? Supporting his argument upon the inconveniences of the system at present in force, Dr. Millingen concluded that an international lazaretto would be indispensible at the mouths of that river.

Dr. Sawas replied that it was precisely with a view to this special case, and to similar analogous cases that the Committee recommended the Swedish system. A lazaretto instituted at the mouth of the Danube upon the model of that at Kanzoë would be the very thing to remove the difficulties mentioned by Dr. Millingen; it would have, moreover, the advantage, for all river states, of not in any way impeding the free exercise of their sovereignty.

The 9th section was put to the vote and adopted unanimously.

Dr. Sotto, Dr. Monlau, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, M. Kalergi, Dr. Maccas, M. Vernoni, Professor Bosi, Dr. Mühlig, and Dr. Pelikan voted under reserve only.

The conclusions of the 9th section were then put to the vote separately.

The first four were adopted unanimously, and without remark. Dr. Monlau voted for the third under reserve.

Dr. Maccas proposed that the fifth conclusion should be amended. The parlor ought not to be suppressed, but its use should be limited as much as possible, and special precautionary measures should be adopted with regard to visitors.

Dr. Fauvel proposed that this conclusion should be modified as follows:—"That the parlors for visitors be suppressed, and that visits be prohibited, *save in exceptional cases, and with the special permission of the sanitary authorities.*"

Dr. Maccas and Dr. Sotto supported this amendment. Dr. Sotto believed that there were urgent and exceptional cases, for which it was necessary to make provision.

Dr. Mühlig did not hesitate to consider visits as the surest means of neutralising the good effects of quarantines. Admission into lazarettos, he believed, ought to be prohibited, even to persons consenting to stay in them and to obey, as the report said, the rules laid down for the persons in quarantine with whom they would enter into communication; permission should be given only to persons engaging *to subject themselves to the rules established for the quarantine of infected persons.* In Dr. Mühlig's opinion, every lazaretto ought to be considered as a focus, and the isolation ought to be complete, with such exceptions as were necessitated by the service.

Dr. Sawas required the total suppression of the parlor. The Conference having admitted that cholera might in certain cases be transmitted by the atmosphere to a distance of 100 mètres, it would contradict itself if it were to maintain parlors. At the same time, however, he believed that Dr. Mühlig went too far when he required that individuals, who might come into communication with the persons in quarantine, for instance, the day before the termination of

the quarantine, should be retained at the lazaretto after the departure of the others for a period equal to the whole duration of the term of quarantine. The quarantine was a trial to which persons coming from an infected place were subjected, in order to ascertain that they did not conceal cholera within their organization. If the persons subjected to quarantine did not present any sign of cholera after ten days' isolation, it was evident that they had not cholera, and not having it, could not transfer it to those who communicated with them, whether on the first or the last day of their trial.

M. Bosi accepted the conclusion of the report. Exceptions would always occur; it was useless, therefore, to provide for them.

Dr. Fauvel remarked that the observations put forward by MM. Mühlig and Sawas were based upon an error of fact; a lazaretto ought not to be considered as a contaminated place, and necessarily under suspicion, otherwise quarantines would be perpetual. Those parts of a lazaretto, where cholera patients were kept, were evidently contaminated; but if the class-system were admitted, it was also necessary to admit that a person, quitting a lazaretto after having performed quarantine, ought to be regarded as having left an uninfected place. Dr. Fauvel did not think that parlors would be necessary if visits were prohibited as a principle, but he maintained that such serious cases might occur that exceptions to this rule must necessarily be made, recourse being had to the necessary precautions. It was pushing things to an extreme length to attempt to prohibit visits by requiring that the visitor should not come closer to the person in quarantine than 100 mètres. If this were done, would it not be necessary, and for the same reason, to do away with the formality of survey and search? M. Fauvel did not believe that the amendment proposed by M. Mühlig could be adopted by the Conference, as M. Sawas had rightly said the visitor should share the fate of the persons in quarantine with whom he placed himself in communication. More than this could not be required.

Dr. Maccas also believed that Dr. Mühlig was too severe. The precautions to be adopted would be easy; and, moreover, communications in the open air would not present the same danger as in a parlor, in which the air was confined.

Dr. Muhlig persisted in his belief that a lazaretto ough tnecessarily to be suspicious and dangerous immediately a single case of cholera made its appearance there: the persons shut up in it already enjoyed a certain immunity, having been exposed to choleraic influence, but it was not so with visitors from outside, from an uninfected place.

Dr. Maccas did not think the hypothesis of the choleraic influence was sufficient to justify Dr. Muhlig's amendment: it was as yet only a theory in no way proved by experience.

Dr. Bartoletti said that the opinion of the majority of the Committee was against visits, because, if once permitted, they could not be prevented from becoming numerous and frequent. It was clearly understood, moreover, that such communications as the local authorities

should deem it necessary to enter into with persons in quarantine should not be regarded as visits, or treated as such.

M. Keun, who approved of the suppression of visits, proposed that every lazaretto should be furnished with a telegraph to convey the communications of the persons in quarantine.

Dr. Mühlig supported this proposal: it would be an efficacious means of restricting the number of visitors.

Dr. Bartoletti having remarked that the establishment of a telegraph in lazarettos could not on any ground be considered as a prophylactic measure, and that, therefore, M. Keun's proposition could not be made the object of a conclusion to be added to those already in the report, it was decided that the proposition should merely be recorded in the minutes, it being stated that it had met with the unanimous approbation of the Conference.

Dr. Fauvel's amendment was put to the vote, and adopted by a majority of 10 against 9.

Ayes:—Dr. Sotto, Dr. Monlau, Count de Lallemand, Dr. Fauvel, Dr. Goodeve, Dr. Maccas, Dr. Millingen, Dr. Pelikan, Dr. Bykow, and His Excellency Salih Effendi.

Noes:—Dr. Dickson, M. Vernoni, Professor Bosi, M. Keun, Dr. Sawas, Dr. Mühlig, M. Stenersen, Dr. Baron Hübsch, and Dr. Bartoletti.

Dr. Mühlig's amendment, which was voted for only by its mover and M. Keun, was rejected by a majority of 16, M. Stenersen not voting.

Dr. Mühlig declared that the Conference had, by admitting Dr. Fauvel's amendment, pronounced the doom of quarantines.

As the adoption of this amendment rendered it useless to vote upon the first part of the 5th conclusion, His Excellency the President put the second part to the vote. It was adopted by all but two members, *viz.*, Dr. Mühlig, who voted against it, and M. Stenersen, who did not vote at all.

The 6th, 7th, and 8th conclusions were separately put to the vote one after the other. They gave rise to no remark, and were adopted unanimously.

Dr. Maccas proposed, in concert with Dr. Pelikan, that the 9th conclusion should be amended as follows:—"While admitting that, in general, the institution of international lazarettos, administered in common by the employés, is not advisable, the Conference is of opinion *that in certain cases the utility* of these establishments administered by the local authorities under the control of mixed sanitary boards is incontestible." Dr. Maccas remarked that this was no new proposition; it was merely the conclusion of the Committee drawn up in other words.

Dr. Dickson proposed that the word *general* should be altogether struck out of the conclusion, which would thus harmonise better with the text.

M. Bosi believed that the Conference ought to express its opinion categorically: it ought to declare that "the institution of international lazarettos, administered by mixed commissions, is advisable."

Dr. Mühlig thought that the amendment moved by Dr. Maccas and Dr. Pelikan might with advantage be modified as follows:—"While admitting, in certain cases, the *fitness* of international lazarettos administered under the control of mixed boards, the Conference is of opinion that, in general, the institution of these establishments is not advisable."

Dr. Maccas and Dr. Pelikan said they would accept the modification.

The Conference then divided.

The conclusion of the Committee was rejected by twelve to five, one member not voting.

Ayes:—Dr. Sawas, Dr. Baron Hübsch, Dr. Bykow, His Excellency Salih Effendi, and Dr. Bartoletti.

Noes:—Dr. Sotto, Dr. Monlau, Count de Lallemand, Dr. Fauvel, Dr. Goodeve, Dr. Dickson, Dr. Maccas, M. Vernoni, Professor Bosi, Dr. Millingen, Dr. Mühlig and Dr. Pelikan. M. Keun did not vote.

M. Bosi's amendment was also rejected by fifteen to three, the ayes being Dr. Monlau, M. Vernoni, and Professor Bosi.

The amendment of Dr. Maccas and Dr. Pelikan, which itself was amended by Dr. Mühlig, was adopted by a majority of nine to eight, one member not voting.

Ayes:—Dr. Sotto, Count de Lallemand, Dr. Fauvel, Dr. Maccas, M. Vernoni, Professor Bosi, Dr. Millingen, Dr. Mühlig and Dr. Pelikan.

Noes:—Dr. Goodeve, Dr. Dickson, M. Keun, Dr. Sawas, Dr. Bykow, M. Stenersen, His Excellency Salih Effendi, and Dr. Bartoletti. Dr. Monlau declined to vote.

The meeting broke up at 4-30 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 42, OF THE 24TH OF SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its forty-second meeting at Galata-Serai at noon of the 24th September 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor to the Internonciature of His Imperial Majesty the Emperor of Austria.

Dr. Sotto, Medical Attaché to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d' Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, French Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, and Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d' Affaires.

For Prussia:

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Prussian Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation at Constantinople.

Dr. Baron Hübsch.

For Turkey:

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

(For Egypt:)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi, one of the Secretaries, read the minutes of the last meeting but one; they were approved unanimously.

Dr. Goodeve called the attention of the Conference to the necessity of insisting very strongly upon the arrangements to be made for rendering a stay in a lazaretto, in future, less monotonous and dismal, and as comfortable and healthy as possible. He thought the Conference ought to urge this idea strongly, and that it ought formally to express the wish that lazarettos should henceforward be constructed in accordance with a new system adapted to combine comfort and salubrity without lessening their efficiency. For their maintenance in proper condition he would propose that they should be subjected to frequent and strict inspections, carried out under the directions of some central authority established by the Government of the country in which the lazarettos were situated.

Dr. Maccas admitted the reasonableness of such a wish, and stated that he quite concurred in it.

Dr. Bartoletti also expressed his entire concurrence. He observed however that, according to the plan proposed by the Conference, the new lazarettos would be very favorably situated as regarded conditions of salubrity. They would be much better ventilated than the old lazarettos, and would be surrounded by large open spaces. In a word, contrary to the old system, the new lazarettos would offer, in his opinion, all the elements of comfort and well-being, and every guarantee of salubrity that could be desired.

The Conference concurred by acclamation in the proposition and the wish expressed by Dr. Goodeve.

Dr. Bartoletti resumed the report and read the 4th chapter, the title of which was "Of the quarantine system and disinfection."

He stopped at the end of the eleventh article, which terminated with the following conclusion:—"To sum up, the difference between the two quarantine systems consists, in the opinion of the Committee, in this, that the quarantine of observation is a time of trial, of simple surveillance, while the rigorous quarantine consists in disembarkation at the lazaretto with disinfection, and comprises every measure applicable to a choleraic arrival."

Dr. Mühlig asked permission to make a few remarks.

The Committee, he said, had given the definition of two different species of quarantine. The distinction which it had adopted could be maintained, but it was important to come to a proper understanding upon several points, for, in his opinion, there was a contradiction between the definition given and the application of the two quarantines. The quarantine of observation, said the report, was applied to ships which, though furnished with clean bills of health, were suspected; but, in other places, it was said also that there were cases where it was applied to ships under foul bills of health, which altogether contradicted the definition given of the quarantine of observation.

Moreover, continued Dr. Mühlig, it was said in the report that the quarantine of observation consisted in keeping apart and under surveillance for some days a ship, her crew, and her passengers. Dr. Mühlig thought that the manner of saying this was too vague, and he believed that it would be necessary to fix the period of this surveillance in the same way that this term should be fixed for the rigorous quarantine. The duration of the quarantine of observation would then depend upon the special circumstances of each case. This was a point to which he meant to revert.

Afterwards, continued Dr. Mühlig, the Committee, in enumerating the different occasions on which it was necessary to apply the quarantine of observation, had omitted to mention on what occasions it ought to be applied to ships under foul bills of health.

These occasions, in the opinion of Dr. Mühlig, would be the two following :—

1*st.*— If the ship under a foul bill of health was in good hygienic condition, and if she had on board a commissioned physician.

2*nd.*— If more than seventeen days had elapsed since the ship had quitted the contaminated place, it being understood that choleraic accidents had not occurred on board in either case.

Finally, said Dr. Mühlig, it was evident that there was a want of harmony between the definitions and the application of the two sorts of quarantine. With the object of making the definition accord with what followed, he proposed to insert the following passage in the text, where it was said "the quarantine of observation applies to suspected vessels although provided with clean bills of health," &c.,—and after the circumstances for which provision was made in points 1 and 2, which he accepted—"the quarantine of observation also applies to ships under foul bills of health, but under certain conditions, to be specified further on."

Dr. Fauvel stated that to a certain extent he concurred in Dr. Mühlig's remarks. He thought it necessary, however, to fix the question with greater precision, and to confine it to the chapter in question. There was rather confusion than contradiction, in Dr. Fauvel's opinion, between the definition and the application of the two kinds of quarantine. The Committee had forgotten that in fact, according to its system, the quarantine of observation would become the general rule, whatever might be the nature of the bill of health. This point was deduced from the report itself, which established that, in certain circumstances ships should be subjected to simple observation, notwithstanding that they were under foul bills of health. Dr. Fauvel admitted the definitions given by the Committee of the two kinds of quarantine, but he proposed to define them as follows as regarded their application :—

"1*st.*—*Quarantine of observation.*

"The quarantine of observation is applicable to every ship whose "*sanitary condition is only suspected*, whatever may be the tenor of the "bill of health, and when no indication of cholera has appeared on board, "and the nature of the cargo is not compromising. In the quarantine of "observation the passengers may remain on board if the ship is not "crowded, and if it is in good hygienic conditions. This quarantine "includes disinfection of effects, clothes, and the suspicious parts of the "vessel, but without previous unloading.

2*nd.*—*Rigorous Quarantine.*

"The rigorous quarantine, *i. e.*, *with obligatory disembarkation of "the passengers and merchandise, and general disinfection of the ship*, "is applicable, in times of cholera, to every ship, whatever may be the "nature of her bill of health, which *has had choleraic accidents* on board, "or whose cargo is of a compromising character, or whose hygienic con-"ditions may be deemed dangerous."

It was not the bill, said Dr. Fauvel, which determined the nature of the quarantine, but the sanitary conditions on board. The true motives

which supported the distinction established by him were the following :—

The difficulties attendant upon conveniently separating the classes of persons undergoing quarantine in lazarettos had been made apparent at the last meeting.

Now, this distinction would facilitate the separation at the same time that it would obviate the overcrowding, which would necessarily occur at the large ports. It did not compromise healthy persons, and would facilitate surveillance at the same time that it would diminish the cost of the service.

It would save commerce from useless charges; and, on the whole, it would offer more guarantees.

This mode of regarding the question, said Dr. Fauvel, would solve the two principal questions relating to quarantines, *viz.*, overcrowding and classification: it would remove the great objection urged against lazarettos, which, to contain the immense number of persons in quarantine, would have to assume enormous proportions, and almost become little towns.

Public security would lose nothing, but, on the contrary, would gain.

Dr. Fauvel asked the Conference to take his proposition into consideration.

Dr. Maccas thought that Dr. Fauvel's proposition should be completed by adding to it the following words :—"As soon as it is learnt that "cholera has manifested itself after the departure of a vessel in the port "she has left, she should be subjected, while she remains under watch, to "a rigorous quarantine."

Dr. Maccas remarked that many vessels arrived in thirty or forty hours from the place of departure to the place of destination, and that consequently the disease which declared itself in the port of departure shortly after the ship's leaving, might exist in the ship in a state of incubation: in any case, in his opinion, a certain amount of doubt existed with respect to them.

Dr. Maccas thought that it was also necessary to look to the duration of the quarantine of observation.

Dr. Fauvel thought the time had not yet come for that. That matter would be discussed by and by, and with more advantage. It was not, in fact, the duration which characterised either the rigorous quarantine, or the quarantine of observation: the latter might be short in case of a simple suspicion in the absence of information, and it might be as long as the rigorous quarantine. In regard to the remark made by Dr. Maccas, Dr. Fauvel stated that if it were learnt, while the ship was under quarantine of observation, that cholera had broken out, or already existed, in the country which the ship had quitted, that would not change the question if the ship were healthy: but

if cholera were to break out on board during the quarantine of observation, then the latter would be transformed into the rigorous quarantine, *viz.*, including disembarkation at the lazaretto.

Dr. Fauvel remarked to Dr. Maccas that his observation, besides, was addressed as much to the report as to his proposition.

Dr. Mühlig believed that every ship under a foul bill of health coming from an infected place, but not having cholera on board, ought, in the first place, to proceed on arriving in port to a principal lazaretto to undergo survey and search, and it would then depend upon the sanitary authorities whether they would retain the ship to perform quarantine, or permit her to continue her voyage. In the latter case she should be subjected to a quarantine of observation in a secondary lazaretto.

Dr. Goodeve agreed in opinion with Dr. Fauvel as to the quarantine of observation and the mode of utilising the ships by obliging persons to perform their quarantine on board. He, however, believed it was necessary to provide that every ship under observation should be visited by a physician, and be furnished with every thing necessary for cholera patients.

In the opinion of Dr. Monlau, the question under discussion was of the highest importance, for it comprised the entire quarantine question. He recommended, therefore, that it should be attentively considered. M. Monlau thought that Dr. Fauvel's proposition would tend to make bills of health a mere formality, and in that case he did not think that their delivery could be continued. The suppression of bills of health would entail, to his thinking, a state of disorder and almost of anarchy, inasmuch as ships would never know to what sort of quarantine they were going to be subjected. According to Dr. Fauvel's system, the quarantine of observation would be the same thing as the rigorous quarantine, with the exception of the disembarkation. Such, said M. Monlau, ought to be the definition to be given of the quarantine of observation, which, according to Dr. Fauvel's proposition, it was desired to substitute for the rigorous quarantine which would thenceforth cease to exist. But would the quarantine of observation have as much efficacy as the latter? Dr. Monlau did not think so, and he declared himself to be in favor of the old system of lazarettos, for there would in his opinion be many difficulties opposed in practice to the performance of quarantine on board ships. There would be a difficulty in ascertaining the condition of the vessels, in attending to the sick, in preventing overcrowding, in making medical visits.

Moreover, said Dr. Monlau, every quarantine ought to be performed in isolation, and this was not said in the report with sufficient precision, the Committee having confined itself to saying that those who had to perform quarantine should be kept separate. Keeping them separate, said Dr. Monlau, was not equivalent to complete and rigorous isolation.

Dr. Bartoletti pointed out to Dr. Monlau that isolation was treated of in many parts of the report. The Committee might, therefore, have employed the word *separate* as being equivalent to *isolation.*

As for the definition he had just given of the quarantines, let him add to the words "except the disembarkation" the words "except during the period," and the Committee, said Dr. Bartoletti, would be of the same opinion as Dr. Monlau.

Dr. Sawas refuted the proposition and remarks made by Dr. Fauvel. According to Dr. Fauvel, he said, the quarantine of observation would be the rule. This was altogether in opposition to what the Committee had desired to establish, *viz.*, that the rigorous quarantine should always be applied, and that the application of the other should be merely exceptional. By rigorous quarantine, the Committee had meant a quarantine the duration of which was fixed, while the duration of the other was to be dependent altogether upon circumstances. There was, therefore, a complete difference of opinion between the Committee and Dr. Fauvel. But which of the two opinions was the more correct? He analysed the different arguments put forward by Dr. Fauvel in support of his system, and he concluded that this system implied the negation of the quarantine system. It was in vain that Dr. Fauvel pointed out that there was confusion between the definition and its application. Dr. Sawas could not see it; on the contrary, he remained convinced that the definition given by the Committee was clear and distinct, and that it was in perfect harmony with the conditions laid down for its application. Why had the quarantine of observation been admitted, if it were not for the clean bill of health? Had the decision of the Conference with regard to Egypt been forgotten? It had recommended that arrivals from Egypt under clean bills should be kept under observation, because the arrivals were regarded as suspicious.

The Committee, continued Dr. Sawas, enumerated the principal conditions desired by the two classes of quarantine, and by these conditions it thought it would obtain every necessary guarantee. If the conditions were analysed, it would be seen that the system of the Committee was the only one which could give serious and complete guarantees. The Committee, moreover, had not failed to establish exceptions in favor of certain arrivals.

Dr. Sawas desired that the Conference should decide between the system of the Committee, and Dr. Fauvel's proposition. That proposition, he thought, was neither an elucidation nor a rectification—it was a system diametrically opposed to that of the report.

M. Pelikan was of opinion that the quarantine of observation ought to be applied only to ships under foul bills of health, and when the sanitary authorities had grounds for suspecting the presence of cholera in the place whence the ship had come, and also for other reasons mentioned in the report. But ships under foul bills of health ought, in Dr. Pelikan's opinion, to be subjected only to the rigorous quarantine with unloading of goods and landing of passengers, and with disinfection of effects. For the rest, he observed, this idea would be developed further on in connection with the question of duration, with regard to which he and Dr. Maccas had both stated their opinions.

The quarantine of observation, added Dr. Pelikan, applied to ships under foul bills of health, could be only a half measure, and would never offer a complete guarantee with regard to arrivals from a contaminated place even when there might have been no cases of cholera on board during the voyage.

M. Kalergi expressed his concurrence in Dr. Pelikan's views.

Dr. Fauvel remarked that he agreed with the Committee as to the principal points, and he adopted them as regarded the denomination. He had, he said, reduced the thing to its reality, and he had demonstrated that confusion existed. This confusion existed in the report relative to the paragraph following the definition. Dr. Sawas did not wish to admit it, but he had no doubt that in the system of the Committee the quarantine of observation would be the rule.

Dr. Fauvel had only desired a change of words—he recommended the substitution of "quarantine of observation" for "rigorous quarantine." This change, he thought, was altogether necessary, since the immense majority of ships, according to the report itself, would be subjected to the quarantine of observation. It was to be noted, said Dr. Fauvel, that the Committee spoke of sailing ships and not of mail-steamers, which had physicians on board. Dr. Fauvel had consequently asked that the real word should be applied to the thing. He had not had any intention of establishing a system differing from that of the Committee, and he had invented nothing; he had simply wished to cause the acceptance of the system put into practice every day. This system consisted in placing in quarantine of observation many vessels under clean bills of health with a view to being perfectly reassured with respect to them.

To Dr. Monlau, who believed that the quarantine of observation did not admit of isolation, Dr. Fauvel replied that this isolation might be perfectly well carried out in the ships better perhaps than in the lazarettos.

Dr. Bosi believed that the question as to whether two sorts of quarantine ought to be admitted, referred to the information which might be furnished by the ship's bills of health. Dr. Bosi accepted the bases on which Dr. Fauvel had founded the two species of quarantine—he even went further; he would be disposed to admit only one quarantine, since there was ground to admit that one of these two kinds of quarantine was based only upon an absence of information. Dr. Bosi was also of opinion that the definition of the report was not exact.

M. de Lallemand wished it had been more distinctly shown in the report that there was complete separation in both species of quarantine. It was important, he said, to state this separation very clearly and precisely, since both Dr. Monlau and Dr. Pelikan, according to their statements, had understood the matter differently from the Committee.

Dr. Bartoletti gave some explanations with the view of demonstrating that the Committee had meant that there was to be complete separation in both species of quarantine.

M. Segovia, in reply to M. de Lallemand, said that M. Monlau did not doubt that the Committee admitted separation. M. Monlau believed only,—and here M. Segovia quite concurred with him—that separation in a ship could not be complete. It was no use talking of spacious ports: custom-house smuggling, and the desertion of sailors—which were matters of frequent occurrence—attested that in ships measures of sequestration were easily evaded. Surveillance in lazarettos was, in his opinion and in that of M. Monlau, easier and more efficacious than in ships, and it was especially for this reason that they had given the preference to lazarettos, for in them, whatever might be said, it was much easier than on board ships.

M. Mühlig remarked that the whole question was in disembarkation. The Committee required disembarkation for all foul bills of health, which were often subjected to the rigorous quarantine, while, in his own opinion and in that of those who agreed in his views, disembarkation was required only in certain cases of foul bills of health, especially if there had been cholera on board.

To M. Maccas it seemed that Dr. Fauvel's proposition had its weak and dangerous sides, although, at the first glance, it appeared attractive. Before developing this proposition, M. Maccas desired to attract the attention of the Conference to the necessity of examining whether the definition was not correct, and whether there was any contradiction or confusion. If the Conference accepted the definition of the report, it would cause each contradiction to disappear as it came forward, and also all confusions, if there was any. But it was not fair, he thought, to pretend to demolish the entire system for fear of encountering contradictions, or because confusion existed. The entire paragraph should be studied and analysed, and if it were not found correct, then only would it be allowable to change it. M. Maccas had made and compared the different definitions, and he had found no essential difference. If there was any difference, it only bore specially upon the application of the quarantine of observation.

M. Maccas was of opinion that in times of epidemics of cholera there could be but one kind of quarantine for all ships coming from a place infected with cholera, *viz.*, the rigorous quarantine, more or less severe, for every ship under a foul bill of health. If this were the only case, he said, a difference of opinion would be scarcely possible. But there were cases in which the quarantine of observation was allowed, though never for ships under foul bills of health. These cases referred to ships which, though under clean bills of health, gave room for suspicion in regard to the existence of cholera in the place they had quitted. M. Maccas believed that if, in M. Fauvel's proposition, it was not said "whatever might be the nature of the bill," everybody could agree with him, but, as it stood, it required to be very carefully considered. According to M. Fauvel's system every ship under a foul bill of health might demand admission to the quarantine of observation. Let it be considered, said M. Maccas, that in the Mediterranean the voyage of most ships lasted for only two or three days; they might, therefore, quit

a contaminated place and arrive in a healthy port without having had any choleraic accidents on board during the voyage. In this case these ships would be simply subjected to a quarantine of observation. But if, before the expiry of the period of quarantine, some cases of cholera were to occur on board of these ships, they would immediately be subjected to the rigorous quarantine, and the days passed in quarantine of observation would count for nothing. The addition, therefore, proposed by M. Fauvel, *viz.*, "*whatever might be the nature of the bill,*" might give rise to serious danger. In the opinion of M. Maccas, this addition could be of no advantage to commerce, but it would be pernicious in a sanitary point of view, for it would destroy all the guarantees and all the efficacy of quarantines.

As for M. Fauvel's opinion that the separation of persons in quarantine was easier on board ship than in lazarettos, M. Maccas did not concur in it, and he considered that, in many ways, it was quite illusory. M. Segovia had, he thought, well demonstrated this, when making known the difficulties met with in watching the persons in quarantine and in obtaining their complete separation. The Conference, said M. Maccas in conclusion, ought to admit, as a rule, but one quarantine: the rigorous quarantine. The quarantine of observation ought to be only an exception.

M. Bartoletti had a word or two to say regarding the blame attached to the Committee by MM. Mühlig and Fauvel. According to the latter, confusion existed in the report,—in spite of which he stated that he agreed with the Committee. If the confusion related only to words, it would be easy to come to an understanding, but if there was a difference of system, and this was what there was, according to Dr. Fauvel, the Conference ought, before pronouncing its decision, to study the two systems, and the Committee should do so too, considering that it was thoroughly acquainted with its report, but had not the slightest idea of M. Fauvel's system.

M. Fauvel wished particularly that the Committee would understand that nobody argued against it. A question was discussed which ought to be submitted for the consideration and approval of Governments—and it was essential, therefore, to be sure that the solution proposed answered the practical object. The Conference could not propose measures that were open to dispute, except at the risk of seeing them rejected. This consideration necessitated the thorough study of the question with a view to coming to a decision as to what was acceptable and what offered the desirable guarantees, and also to be sure that what was proposed was practical. It was in this sense and with this intention that he had submitted his proposition, a proposition which he had maturely considered before bringing it forward. If it were demonstrated to him that what was proposed was not good, and that the arguments he had urged in support of it were not solid, he declared himself ready to accept whatever opinion might be deemed by the majority to be based on the best foundations.

M. Fauvel added, in the interests of the discussion, other considerations in addition to those he had already brought forward. It had been

said that in the point of view of isolation, the two quarantines were altogether different, and to prove this it had been mentioned that the one necessitated disembarkation while the other did not. Disembarkation, said M. Fauvel, was a very onerous operation, and an attempt to impose it upon all measures would be simply making the measure impracticable. It had been pretended that a ship subjected to the quarantine of observation could not be strictly watched, and that consequently it could not be completely isolated. But M. Fauvel was of opinion that this danger existed quite as much, and even more, in lazarettos. Unless immense lazarettos were provided, it would be impossible to obtain a complete separation of the different classes. Let them suppose 2,000 persons in quarantine,—and this was a figure which, thanks to the facility of communications, might in these days be easily attained and even exceeded,—how could they succeed in keeping one class separated from the other, and what a quantity of space, and what a prodigious number of buildings, they must have in every lazaretto?

All this, on the other hand, was quite naturally accomplished on board ship: there the classes made themselves, so to say, and nothing was easier than to obtain complete isolation. Would it be just, asked M. Fauvel, on mere suspicion to expose untainted persons to the risk of contracting the disease by throwing them abruptly into a lazaretto and leaving them to mingle with cholera patients? It was pretended that the ship might easily enter into communication with outsiders, but nothing was easier than to anchor the ship at a distance from the port and to isolate her. The quarantine was ordinarily performed in this way. It was also the system in force in Constantinople, and it had certainly not given bad results; on the contrary, it might be affirmed that it had been practised with success. It had also been said, continued M. Fauvel, that disinfection could only be partial—but the report itself said that hygienic disinfection would be performed, and that goods would not be disinfected unless they were susceptible. In the opinion of M. Maccas, the distinction would be justified if the duration of the voyage were taken into consideration, but M. Fauvel had already said that the duration had nothing to do with the question: the duration of the quarantine of observation might be quite as long as that of the rigorous quarantine. The important difference consisted in the disembarkation or not at the lazaretto. M. Fauvel said, in conclusion, that his proposition was only an addition which in no way contradicted the conclusion, but which completed it and made it harmonise with the text.

M. Bartoletti confessed that he was not quite clear as to this addition, and he believed that M. Fauvel's proposition bore upon a question not under discussion, and which constituted a system opposed to that of the Committee. There was, he remarked, an entire chapter in the report which treated of the application of the quarantine system: when this chapter would be brought under discussion, then only could the question put by M. Fauvel be brought before the Conference.

Dr. Dickson was of opinion that the want of agreement depended in great measure upon a sufficient distinction not having been made of what was due to the nature of the bill, and what was due to the condition of the ship. The bill showed the sanitary condition of the port of departure : it stated whether cholera existed or not. But the quarantine which ought to be applied to the ship should result from the conditions presented by her on her arrival, including the conditions of the passage. To all this was to be added the tenor of the bill. This being admitted, a ship under a clean bill of health would, in certain cases, perform the rigorous quarantine, and a ship under a foul bill of health might perform only the quarantine of observation.

Baron Hübsch thought that the different opinions might be made to agree if, in mentioning quarantines, the words "*of observation* and *rigorous*" were left out.

Dr. Bartoletti remarked that that was scarcely possible, considering that the words occurred in the programme. He reminded Dr. Dickson besides that an entire chapter of the report was specially devoted to the question of the bill of health.

M. Sawas desired to make an observation. Hitherto, he said, the Conference in its discussions had commenced with an examination of principles, but on the present occasion it was desired to make it follow another path. M. Sawas believed that there should be no change of system, and he asked the Conference to proceed in the matter as it had hitherto done with other affairs. Once the principle was admitted, the Conference might, in his opinion, proceed to consider its application, and then also room might be found for the additions or explanations contained in M. Fauvel's proposition, which proposition, however, was, in point of fact, nothing else but a system altogether opposed to that of the Committee.

M. Fauvel added a few words more with the view of making it clearly understood that his proposition only referred to that paragraph in which the cases in which the quarantine of observation was to be applied were mentioned. His addition might be inserted in the text in place of the first and second points, if it were not considered desirable to add it to the conclusion. He expressed his readiness to strike out of his definition the words "*whatever might be the nature of the bills,*" so as to agree with M. Maccas, but seeing the impossibility of agreeing, he maintained his proposition as it originally stood.

At the request of several Delegates, His Excellency the President put M. Fauvel's amendment to the vote.

It obtained 11 votes against 14.

Ayes :—MM. Sotto, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Millingen, Testa, Mühlig, Bykow, and Salem Bey.

Noes :—MM. Vetsera, Segovia, Monlau, Maccas, Bosi, Salvatori, Keun, Mirza Malkom Khan, Sawas, de Soveral, Stenersen, Hübsch, Pelikan, and Bartoletti.

M. Mühlig requested that a division should also be taken upon his amendment. It might be intercalated in the text immediately after the words "and of the sanitary condition of the crew and passengers."

M. Sawas considered this amendment was altogether superfluous.

M. Bosi considered it was only a detail of M. Fauvel's amendment.

M. Bartoletti said that the amendment might be inserted in the text, where he believed M. Mühlig wished to place it.

M. Stenersen was of opinion that this amendment had no connection with the question under discussion, and he was surprised that M. Mühlig persisted in wishing to connect them.

His Excellency the President put the amendment to the vote.

It obtained 10 votes against 14.

Ayes :—MM. Sotto, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Testa, Mühlig, Hübsch, and Salem Bey.

Noes :—MM. Segovia, Monlau, Maccas, Bosi, Salvatori, Keun, Millingen, Mirza Malkom Khan, Sawas, de Soveral, Pelikan, Bykow, Stenersen, and Bartoletti.

The President put the text of the 4th chapter of the report to the vote as it stood.

It was adopted by a majority of 11 against 5, and 7 who declined to vote.

Ayes :—MM. Maccas, Bosi, Salvatori, Keun, Mirza Malkom Khan, Sawas, de Soveral, Pelikan, Stenersen, Bartoletti, and His Excellency Salih Effendi.

Noes :—MM. Sotto, Spadaro, Fauvel, Testa, and Mühlig.

Declined to vote :—MM. Segovia, Monlau, de Lallemand, Goodeve, Dickson, Bykow, and Hübsch.

The President put the conclusion of the 4th chapter to the vote.

It was adopted by a majority of 21—none against it, and 3 abstentions.

Ayes :—MM. Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Maccas, (under reserve,) Bosi, Salvatori, Keun, Millingen, Mirza Malkom Khan, Sawas, Pinto de Soveral, Testa, Mühlig, Pelikan (under reserve), Bykow, Stenersen, Hübsch, Bartoletti, and H. E. Salih Effendi.

Declined to vote :—MM. Sotto, Segovia, and Monlau.

MM. Monlau, Maccas, and Pelikan said they did not mean to accept the statement that there would be a quarantine of observation for ships under foul bills of health. They declared, moreover, that they were opposed to half-measures.

M. Bartoletti read Article 11 of the 4th chapter, bearing the title "Of the quarantine applicable to persons coming from a contaminated

" place. What ought to be its duration? When should the quaran-
" tine be considered as having commenced?"

M. Mühlig wished to speak. This was a very important question with regard to which he was about to explain his views, and as they differed from those of the Committee, he begged the attention of the Conference to what he was about to say.

It would be well, in his opinion, to fix, above everything, in a general way, the duration of quarantine, leaving aside for the moment the quarantine of observation and the rigorous quarantine. Hitherto, said M. Mühlig, the duration of incubation was taken as a base; but this principle did not seem to him to be applicable to the present case, and, moreover, it was a principle which necessarily led to mistakes. The Committee had said that incubation never lasted for more than ten days, and that at the end of that term either confirmed cholera or choleraic diarrhœa was necessarily developed. This was correct, said M. Mühlig; but it would be dangerous to take this fact for a basis in fixing the duration of the quarantine. Such a proceeding would presuppose that persons had been kept under observation and perfectly isolated from each other by a distance of 100 mètres at least, and that it would be easy to ascertain the immediate occurrence of an intestinal disorder. It was impossible, in M. Mühlig's opinion, to seize these indices of cholera, for observation had always been maintained over groups of individuals, and intestinal derangements very easily escaped observation if there was any interest in concealing them. These diarrhœas certainly were of some importance in this question, but only in this sense, that if the existence of diarrhœa was stated, the existence of danger was inferred, while at the same time it was not enough to give confidence that its existence was not stated, for the absence of any statement of its existence was far from being a proof of its non-existence. So that the opinion of the Committee could not be accepted, *viz.*, that if at the end of ten days no case of diarrhœa was stated, pratique must be given to the persons in quarantine. It was important then, in M. Mühlig's opinion, to look for quite another principle in fixing the duration of quarantine. Now, he thought that, in this case no other guide was possible—and here he was agreed with almost every physician—but confirmed cholera. The question then would be: What was the maximum period of time which elapsed between the departure of a group of men from a choleraic focus and the first choleraic attack manifesting itself in that group? The question thus put, said M. Mühlig, had truly practical importance. But what had experience taught upon this point?

M. Mühlig thought it would be useful, in this respect, to consult the historic précis of the Conference, and he called its attention to the following facts:—

At page 8:—

A guard who had performed a quarantine of ten days fell ill two days after being admitted to pratique and died in town—the attack occurred twelve days after isolation.

At page 9 :—

A man named Stamati Aïvalioti was attacked at Enos thirteen days after his arrival: till then no case of intestinal indisposition or of cholera had been observed at Enos.

At page 14 :—

In Crete, the first death among the passengers by the steamer Missiri took place on the 6th July. A man named Antonio, brother of the apothecary who attended upon the cholera patients, was attacked on the 16th July—there had, therefore, been an interval of ten days, which proved that the ten days which had elapsed since the last case did not offer a sufficient guarantee.

At page 20 :—

At Suleimanieh the first cases occurred on the 31st October. There were no new cases till the 13th November, *viz.*, an interval of thirteen days.

At page 22 :—

At Erzeroum there were no accidents from the 7th to the 23rd November—on the 23rd November, 12 cases—an interval, therefore, of sixteen days.

At page 28 :—

The diarrhœa of the child of the woman of Altenberg, which was more then eleven days old, became the probable cause of the choleraic attack of the mother.

At page 31 :—

The woman Puccinotti, who arrived from Alexandria at Trieste on the 4th August, was placed under quarantine of observation, cholera not having shown itself during the voyage. She was attacked by cholera on the 8th, *i. e.*, four days after her arrival and ten days after her departure, adding the period of the voyage.

At pages 39 and 41 :—

The following facts were clearly ascertained at Gibraltar by Mr. Inspector General Rutherford :—

1*st*.—The 2nd battalion of the 22nd regiment embarked on the 5th and 6th of July at Malta, where cholera prevailed. It arrived at Gibraltar, which was quite free from the disease, on the 10th July. The first case of cholera at the latter place occurred on the 18th, that is to say, at the end of twelve days.

The second case in this regiment did not occur till the 31st of July, *i. e.*, thirteen days afterwards. Cholera prevailing at Gibraltar, a part of the first battalion of the 9th foot was embarked on board the *Renown*; the following day, the 22nd August, a case of cholera occurred on board, and thirty hours afterwards the ship put out to sea. Now, on the 5th September, *viz.*, after the ship had been thirteen days at sea, and the 14th day after the occurrence of the first case, cholera broke out on board in a

very malignant form and carried off nine men. There was a physician on board, who had not observed a case in the interval.

Facts then proved, said M. Mühlig, that the period during which cholera remained latent in a group of persons might extend to 10, 12, 13, 14, and even 16 days. M. Mühlig said *latent*, for it was probable that cholera already prevailed amongst them in the form of diarrhœas, which succeeded each other, but which necessarily escaped observation in an assemblage of men. Let it not be said that diarrhœa would certainly be discovered in a lazaretto. How, he would ask, could one or two physicians control, in an assemblage of some hundreds and even some thousands of men, an affection so difficult to control as diarrhœa, especially if all by common consent, had determined on concealing it? But it would be said that there were health guards. Did they seriously believe they would find a sufficient guarantee in the presence of a health guard, where the presence even of a physician scarcely offered one? There was thus no possible doubt in his, M. Mühlig's, mind upon this subject: to arrive at a rational term of quarantine, and one that afforded the desired guarantees, it was necessary to take into account not only the incubation but also the duration of the diarrhœa, and it was necessary to ascertain especially what time elapsed before the manifestation of the first cases of confirmed cholera in an assemblage of contaminated men. Taking all this into account, M. Mühlig would feel disposed to fix the duration of the quarantine in general at seventeen clear days. In America, he said, twenty-one clear days were admitted. That was to say, the duration of the quarantine would be seventeen full days with the modifications indicated, accordingly as the quarantine in question was a quarantine of observation or a rigorous quarantine.

Now for the differences to be established in this latter respect: differences which especially resulted when it was taken as a point of departure for calculation.

Quarantine of observation.—No disembarkation at the lazaretto, anchorage at a distance from it, for ships under foul bills of health.

1*st.*—Physician on board—reckoning from the day of departure—the term of the voyage, therefore, to be deducted from the 17 days—a day of observation over and above this period.

2*nd.*—No physician on board—more than 17 days' passage—5 days of observation.

For ships under clean bills of health, the duration of the quarantine should be determined in each special case by the sanitary authorities.

Rigorous quarantine.—Cholera on board, less than 17 days' passage and with no physician on board—17 days' quarantine to begin from the time of landing goods and passengers and from the moment of taking on board a guard of health. If the existence of cholera or of choleraic diarrhœa were still stated, the quarantine to date from the last accident occurring during the period of quarantine.

For land arrivals, M. Mühlig was of opinion that only the rigorous quarantine should be admitted.

The term of 11 days, said M. Mühlig, might startle some, but in practice the question was presented in a very different manner. For steamers having a physician on board and coming from a distance, the quarantine would most frequently be reduced to a few days, or even to nothing; for those which came from a very near focus, greater rigor would, on the other hand, be a necessary guarantee. For sailing vessels the quarantine in most cases would not exceed five days: for the rest, as there were not ordinarily many passengers on board, there would be no crowding in the lazarettos, even if a prolonged quarantine had to be performed.

M. Mühlig submitted to the Conference the opinion of Dr. Hukemann, who had described the epidemic of Mecklenburg. He said, with reference to quarantines, that they had often been inefficacious to prevent the propagation of cholera for two reasons, either because the duration of incubation had been longer than ordinary, or—as was most frequently the case—because the choleraic germ reproduced itself during the period of quarantine, merely by means of patients suffering from diarrhœa. Now, for the quarantine to offer a certain guarantee of efficacy, it would be necessary, in the first place, that it should comprise all ships coming from infected places; then, if a case of cholera had taken place on board, it would have to last until the maximum period of incubation was passed, reckoning from the termination of this case; it ought to last as long, if the persons on board remained in good health, counting from the day of departure from the infected place. Finally, it should not cease until all the crew were free from any disorders of the alimentary canal.

Dr. Goodeve wished to make an observation regarding the 3rd conclusion enunciated in the report by MM. Pelikan and Maccas. They maintained that the diarrhœa which manifested itself on board a vessel coming from a choleraic locality was, in the immense majority of cases, of a choleraic character. Dr. Goodeve disputed the correctness of this assertion, so far as regarded arrivals from hot countries, India for instance, and the extreme East in general. He affirmed, on the contrary, that the great majority of bowel-complaints which occurred among those who embarked at the infected ports of those countries, were not in any way of a choleraic character. The diseases that were current under the name of chronic diarrhœa and dysentery were extremely frequent in hot countries, and a change of domicile was imperiously necessary for the patient's recovery—so that persons suffering from these diseases were always to be found in homeward-bound vessels from India. It would be a most fatal thing to confound them with choleraic patients, and consequently he deemed it his duty to bring the fact to notice.

The ingenious system which M. Mühlig had just detailed did not seem to M. Fauvel to be as practical or as certain as M. Mühlig believed it to be. In the opinion of M. Fauvel, the duration of the quarantine M. Mühlig wished to establish would prove useless rigor. According to the view entertained by M. Mühlig, the duration of the

period of incubation would have to be reckoned, not from the first premonitory choleraic accidents which (M. Fauvel did not deny the fact) ordinarily escaped attention, but from the time when confirmed cholera generally declared itself. If every known instance were taken, said M. Fauvel, it would be seen that two or three days after departure from an infected place, choleraic diarrhœa, followed or not by confirmed cholera in a very short time, declared itself on board, or nothing at all occurred. Now, M. Mühlig would wish to wait for the period of the development of the attacks of cholera to fix the duration of the quarantine.

As for the facts quoted by M. Mühlig, they were capable of receiving a different interpretation from that given them by M. Mühlig, and nothing would be more easy than to refute them and to make them support a theory opposed to that maintained by M. Mühlig. Thus, for instance, it might be maintained that the person, in the first case quoted, who was attacked by cholera two days after pratique, received the germs of the disease in the lazaretto itself while he was undergoing quarantine.

The individual who died at Enos (in the second case,) might have contracted the disease after his departure from the vessel. Was it known what he had done and where he had gone during the thirteen days which had elapsed between the day he quitted the ship and the day of his death? What could be said relative to the Cretan case, was that the man Antonio having been in constant and direct communication with his brother the apothecary, who attended upon the cholera patients, might have contracted the disease from his clothes, his brother not having been subjected to any regulated purification.

The Gibraltar case, said M. Fauvel, was also far from proving the duration of incubation. In fact, twelve days had elapsed between the time of departure and the development of the first case. But it should not be forgotten that at that period diarrhœa was not taken into consideration at all. It was, therefore, natural to assume that it existed among the soldiers, and passed unperceived.

As Dr. Fauvel knew that Dr. Bartoletti would not allow the cases M. Mühlig had extracted from his historical précis to pass unrefuted, he would not carry his analysis of the same facts further. What had been said was more than sufficient, he believed, to demonstrate their insufficiency in respect of the thesis M. Mühlig wished to found upon them. He would proceed, therefore, to consider the other points in M. Mühlig's speech.

And in the first place, now that attention was fixed upon the importance of diarrhœa, was it as difficult as M. Mühlig supposed to discover cases of suspected diarrhœa even in a group of persons? M. Fauvel did not think so.

On the other hand, there were instances proving that after an epidemic, there were little remains of it, which broke out after several months. Could it be said that during the whole time that had elapsed between the

great epidemic and these reminiscences, the disease had remained in a state of incubation? Was it not necessary to admit other causes?

M. Fauvel believed that the scale given by M. Mühlig was arbitrary. Why should the quarantine be fixed at 17 days? There were cases where the development of the first attacks of confirmed cholera did not take place until 20 and 25 days, and sometimes more, after the date of departure. The duration of the quarantine might, therefore, be further extended. But in reality this was not necessary, and M. Fauvel was of opinion that the term of ten days gave a sufficient quarantine combined with the means of disinfection. If even the first cases of diarrhœa on board a ship escaped notice, cholera would by the ten days quarantine have time to manifest itself, and the diarrhœa might be revealed to attentive surveillance. But if there were some exceptions, they should not serve as a rule for an entire system. There must be a certain proportion between the danger and the means of preservation from it, otherwise measures would be arrived at which were exaggerated and inapplicable because they were not sufficiently justified.

M. Bartoletti remarked that the cases taken from his report were, as had been very well said by Dr. Fauvel, far from being so conclusive as Dr. Mühlig thought. To become conclusive the facts should be exempt from any other interpretation. Now this was not so.

In fact, said Dr. Bartoletti, the guard of health who had been attacked after a ten days' quarantine and two days' stay in town, might have contracted the germ of the disease while he was performing quarantine in such an infected place as the Dardanelles lazaretto. Was not the soldier who was posted as sentry outside the lazaretto, and who had contracted cholera, more secure from the disease than the health guard who was inside? Stamati Aïvaliotis had been sick since his arrival at Enos and had attended upon himself, without any medical assistance. On the 13th day his disease developed into confirmed cholera. It must be added that a great number of ships arriving from localities infected by cholera performed quarantine in the port to which Stamati, who was a sailor, belonged; the date of his attack could not, therefore, be told.

In Crete, the man named Antonio, the brother of the apothecary who attended upon the cholera patients, had probably received the germ of the disease, which was developed some days later, from the clothes of his brother, who had not yet accomplished the regulated period of quarantine. Moreover, the previous case of cholera in the lazaretto did not take place on the 6th but on the 8th July, which would reduce the presumed period of incubation to two days.

The Suleimanieh and Erzeroum cases proved absolutely nothing with respect to incubation. They only referred to such recrudescences as were everywhere seen. The matter was also explained by the successive arrivals of pilgrims and travellers who frequently imported the disease into those places.

The woman of Altenburg had had her child ill of diarrhœa since her departure from Odessa, and, besides, it was not said that she had not had compromising communications along the Lower Danube, where the steamer had to stop at several places where cholera prevailed.

Had not the woman Puccinotti, who came from Alexandria, her baggage with her, coming from a focus of infection, the contamination in which was a very admissible fact?

As for the Gibraltar cases and those that occurred at sea after an interval of thirteen and fourteen days, the report made mention but once of diarrhœa. Now, as in these cases the subjects were regiments embarking, the thing was not easily ascertained and might have passed unperceived.

It was evident, concluded M. Bartoletti, that, according to all the circumstances, the complex facts in question might be interpreted in different ways, and consequently they were a very equivocal demonstration in the point of view of the duration of incubation. Proper criticism should consider the matter so.

According to Dr. Goodeve, M. Mühlig's theory was based upon a principle very open to dispute, *viz.*, upon cases of long incubation, which were altogether exceptional. The general rule shewed, on the contrary, that incubation did not ordinarily last for more than a few days, therefore M. Mühlig asked either too much or too little. Instead of stopping at fifteen or seventeen days' trial, he might in the same way, and taking as his basis the long duration of the diarrhœa, require thirty days and even more. Statistics as to the duration of fatal diarrhœa of every kind during epidemics of cholera (those of London, for instance, in 1845 and 1854) showed a mortality in which the duration of the cases varied from a few hours to five and six weeks. But the great majority of cases terminated in death before the tenth day. It was very probable that cases of cholera of long duration were everywhere cases which had commenced with simple diarrhœa, or summer diarrhœa, which on account of the prevailing epidemic, transformed themselves into cases of cholera or choleraic diarrhœa, and that it was from these complex cases that conclusions had been drawn as to the occasional duration of cases of premonitory diarrhœa for several weeks. The possibility of such a complication deprived them of much of their value when they came to be practically applied. Dr. Goodeve did not concur in Dr. Mühlig's opinion, who maintained that it was necessary in practice to reckon in the period of incubation all the time that might have elapsed from the moment when the person might possibly have become infected till the development of cholera; but he believed that in practice it was necessary, as in other diseases, rather to reckon from the invasion till the first symptoms.

In regard to the case of the *Renown*, quoted by M. Mühlig, it did not prove, in Dr. Goodeve's opinion, that there had been definitively an incubation of fourteen days. As they did not possess the complete history of the epidemic, there were grounds for the belief that premoni-

tory diarrhœa had prevailed on board for several days before the outbreak of confirmed cholera. Five or six days of incubation, and seven or eight days of diarrhœa would, said Dr. Goodeve, account for the fourteen days that elapsed after the death of the soldier on board, and this even in the absence of any other more tardy cause of infection, either by contaminated baggage of clothes.

Dr. Goodeve believed with Dr. Fauvel that it was not so difficult as M. Mühlig thought to ascertain the existence of diarrhœa in groups of persons, and he was of opinion that the term of ten days was sufficient for cholera, for during this lapse of time choleraic diarrhœa would declare its nature in a sufficiently decided manner. Though he did not deny that there might be exceptions of longer duration, Dr. Goodeve was convinced that in practice it would be impossible to base the rules of quarantine upon altogether exceptional cases, which would require besides three or four weeks' isolation. Dr. Goodeve concluded that a quarantine based upon exceptional cases would be more prejudicial than advantageous to commerce, and would be opposed to the true interests of peoples.

At the general request, Article 11 of the 4th chapter was put to the vote. It was adopted by a majority of 17, none being against it, and three conditional votes of support.

Ayes:—MM. Sotto, Monlau, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Maccas, Bosi, Salvatori, Malkom Khan, Sawas, Bykow, Hübsch, Stenersen, Bartoletti, and H. E. Salih Effendi.

M. Pelikan and M. Millingen said they would have voted for the entire article if the quarantine had been extended to 15 days, and MM. Keun and Mühlig said they would have done so if it had been extended to seventeen days.

The meeting terminated at 6 P. M.

Order of the day for the next meeting. Continuation of the discussion of the 2nd Committee.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING No. 43, OF THE 25TH SEPTEMBER 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its forty-third Meeting at Galata-Serai on the 25th September 1866.

PRESENT:

For Austria:

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Medical Attaché to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Denmark:

Chevalier Dumreicher, Consul-General to His Majesty the King of Denmark at Alexandria.

For Spain:

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Board of Health of Spain.

For the Papal States:

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

For Greece:

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

For the Netherlands:

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

For Persia :

Dr. Sawas Effendi, Inspector of Hygiene and Salubrity at Constantinople, Persian Delegate to the Superior Council of Health.

For Portugal :

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

For Prussia :

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Prussian Legation, Chief Physician to the Ottoman Marine Hospital.

For Russia :

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Bykow, Councillor of State, Assistant Medical-Military Inspector of the Arrondissement of Wilna.

For Sweden and Norway :

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Majesty's Legation at Constantinople.

Dr. Baron Hübsch.

For Turkey :

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

(For Egypt :)

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

The minutes of the 41st meeting were read by Baron de Collongue and adopted.

The twelfth section (chapter IV) of the report of the 2nd Committee was read.

Dr. Goodeve proposed that the duration of the voyage should be deducted from the quarantine for ships admitted to be in good hygienic

condition, even though two or three cases of cholera might have occurred during the first three or four days of the voyage. The quarantine of observation would then be reported to have commenced twenty-four hours after the last noted case, the clothing and effects of the sick having besides been destroyed, and the place in which they lived having been carefully disinfected. The ship would, therefore, on arrival at her destination, be subjected only to a quarantine of observation, the duration of which would be calculated in such a way as to complete the ten days of observation. Dr. Goodeve added that this concession would have a special interest for ships coming from India to Europe, and especially for ships from Calcutta. These latter frequently took on board persons who had contracted the choleraic germ on shore, and who fell sick a day or two after embarkation; choleraic accidents most frequently ceased after the ship dropped down the river and put out to sea.

The report, on the other hand, reducing the duration of the quarantine to five days in the event of the voyage lasting for fifteen days or more, Dr. Goodeve proposed in the second place that for ships starting from a contaminated place, but having passed entire months upon the voyage, the quarantine should be altogether suppressed. Basing his argument upon the fact that for fifty years there had been no instance of cholera having been imported from India into Europe by sailing ships doubling the Cape of Good Hope, Dr. Goodeve was convinced that it would be sufficient if a ship, after a voyage of more than thirty days, were subjected to the formality of survey and search; if the result were satisfactory, the ship might then be admitted to pratique.

Baron Testa supported this last proposition.

It was also supported by M. Keun, who mentioned the fact of a sailing ship recently arrived at Constantinople from Antwerp, and which, though her voyage had lasted for seventy days, had, nevertheless, been subjected to a ten days' quarantine at the Dardanelles.

Count de Lallemand thought that this proposition could not in any case be received unless there was no merchandise on board of the kind declared by the Conference to be dangerous, and which, confined on board a ship, might transmit cholera after the termination of voyages of more than thirty days in length. The Conference ought not to forget that quite recently cholera seemed to have been imported into Guadaloupe by a vessel whose voyage had been not less than thirty-six days in duration.

Dr. Goodeve did not believe that, beyond a certain time, merchandise could retain the power of transmitting the disease, and, therefore, that its disinfection was unnecessary. The only exceptions were drills and rags.

Dr. Salem Bey believed that it would be running a risk of very great danger to accord pratique to ships on board which choleraic accidents might have occurred during the voyage. On the contrary,

it seemed to him that Dr. Goodeve's second proposition might be entertained without inconvenience.

M. Segovia seconded Count de Lallemand's remark. A ship ought to be considered as a suspicious focus, and if science had not yet succeeded in fixing a time during which the choleraic germ retained in confined merchandise maintained its power of action, it was not less evident that this action might maintain itself after voyages of several months' duration. Without demanding, however, that all kinds of merchandise without distinction should be disinfected, M. Segovia remarked that there were some kinds with regard to which it would doubtless be imprudent not to adopt some kind of precaution.

Dr. Dickson divided all choleraic arrivals into two classes: such as were dangerous and such as were not so. He classed amongst the first, ships which during their voyage had had cases of choleraic diarrhœa on board, which were crowded, which carried emigrants or pilgrims, lastly, those that were in bad hygienic conditions. In the second class he placed those which could not be included in any of the cases just mentioned. Dangerous arrivals, ought, in Dr. Dickson's opinion, to undergo the rigorous quarantine. As for non-dangerous arrivals, they should, with the exception of those which had made a long voyage, and to which pratique might properly be accorded almost immediately, undergo the quarantine established by the Committee.

M. Keun did not believe that any instance could be cited of the transmission of cholera by merchandise after a voyage of sixty or seventy days. At the same time he admitted, with Count de Lallemand, that it might be necessary, even after a long voyage, to adopt special precautions with respect to certain kinds of merchandise.

Dr. Goodeve objected that on board large ships, such as were now built, the ventilation was as good as, if not better than, in any lazaretto. A first class ship, going at the rate of ten knots an hour, was certainly in the best condition in the point of view of disinfection by air.

In Dr. Fauvel's opinion, the Conference could not adopt Dr. Goodeve's first proposition without upsetting all the principles it had previously admitted. The foundation of these principles was that every ship having had choleraic accident on board might become a persistent focus, and that therefore it was indispensible on her arrival to have recourse to measures of disinfection. Dr. Fauvel, moreover, disputed the assertion that all parts of a vessel were in the same condition as regarded æration and ventilation. If the higher parts, those which were inhabited, left nothing to be desired in this respect, it could not be pretended that that was the case in the hold, for instance.

In regard to the second proposition, Dr. Fauvel admitted that the general rule was that sailing ships had never imported cholera after a long voyage. There was, nevertheless, the fact quoted by Count de

Lallemand of the importation of the disease into Guadaloupe, and even if this fact were doubtful, it was not the less a reason for being forearmed. Dr. Fauvel declared that he would, however, be disposed to vote for the proposition in question, if Dr. Goodeve would consent to amend it. After a voyage of thirty days at least, sailing ships should be admitted to pratique after twenty-four hours' observation, with the purification of such goods as were susceptible, luggage and the suspicious parts of the ship, but without an entire unloading of the vessel. This delay, in Dr. Fauvel's opinion, would be sufficient to enable the sanitary authorities to ascertain the hygienic condition of the vessel, to disinfect her suspicious parts, and to proceed to measures of purification. The end of the conclusion would be modified as follows :—"4*th*. To reduce to "five days the quarantine applicable to ships whose voyage may have "lasted for from fifteen to thirty days without any choleraic acci- "dent, and to twenty-four hours when the duration of the voyage may "have exceeded thirty days : in both cases, susceptible goods, luggage "and the suspicious parts of the vessel being disinfected, but the "ship not being entirely unloaded."

Dr. Goodeve consented to this modification in the second part of his proposition.

Dr. Bykow supported the observations made by Dr. Fauvel. He would vote against Dr. Goodeve's first proposition, for it seemed to him to be contrary to the principles admitted by the Conference, but he approved of the reduction of the quarantine to twenty-four hours for ships whose voyage might have exceeded thirty days. Below thirty days, the quarantine ought to last, as proposed by the Committee, for five days. Dr. Bykow also stated that he was in favor of the employment of measures of disinfection in both cases.

Dr. Maccas concurred in these views.

Dr. Bartoletti also expressed his concurrence, in the name of the Committee, in Dr. Goodeve's second proposition as modified by Dr. Fauvel.

Dr. Goodeve's first proposition was rejected by a majority of 20 to 1, *viz.*, its mover.

The second was adopted unanimously, with the exception of Dr. Pelikan, who declined to vote.

The Conference next proceeded to vote upon the 12th section. It was adopted, text and conclusions, unanimously, with the exception of Dr. Goodeve, who declined to vote. Dr. Pelikan said he voted under reserve with regard to the first conclusion, to which he did not agree.

The 13th section was then read.

Dr. Fauvel said he was glad that the Committee had considered that the presence on board a vessel of a physician commissioned *ad hoc* was a guarantee permitting of the duration of the voyage being included in the quarantine, but if it wished the guarantee to be serious, he did not understand that the declarations of any physician should be admitted.

He would even wish that in every case the sanitary authorities of the place of arrival should have the right of testing the exactness of the declarations made, and of rejecting them, if there should be any well-founded suspicions of their correctness. Dr. Fauvel did not doubt that incorrect declarations would be altogether exceptional, and that, as a general rule, reliance might be placed upon them; but they ought not to forget what had happened last year at Constantinople, where cholera was imported by a ship which, contrary to the declaration of the physician on board, had had deaths from cholera on board during the voyage. The repetition in the East of what happened in this case must be all the more strongly provided against, that this false declaration was made with impunity.

Dr. Fauvel, with reference to its having been said that the persons embarked on board a ship ought to be allowed only as much baggage as was strictly necessary, remarked that it was the quality and not the quantity of the baggage which should be particularly looked to.

Dr. Goodeve thought that the indiscriminate application of the twenty-four hours' quarantine to ships having spent ten days or more on their voyage, might be dispensed with. Would it not be enough to verify the condition of these ships, and if this were found to be satisfactory, could not they be at once admitted to pratique?

Dr. Monlau did not admit that the duration of the voyage ought in any case to be deducted from the period of quarantine. With such concessions, the fatal termination of the suppression of quarantines would be reached. Dr. Monlau disputed the importance attached to the presence, evidently useful and desirable in the point of view of ease and attention to the passengers, of a physician on board. Was there not well-founded apprehension that the physician, being devoted to the interests of the Company by which he was employed and paid, would not always preserve his entire independence? In Dr. Monlau's opinion, moreover, the duration of the voyage could not always be included, unless the voyage was direct from port to port. Dr. Monlau asked, in conclusion, why the report, which made mention of the measures of hygiene and disinfection to be applied on board ships before their departure and during their voyage, did not also speak of the measures of the same kind to be adopted on their arrival?

Dr. Bartoletti, replying to the various objections that had been urged, remarked in the first place that the report referred only to physicians appointed by Government, and therefore offering all necessary guarantees. In regard to Dr. Fauvel's objection, that the quality rather than the quantity of baggage should be looked to, Dr. Bartoletti thought that it was unnecessary to say that the intention of the Committee could never have been to constrain travellers to deprive themselves of any portion of their baggage. If, finally, the report said nothing with respect to measures of hygiene on arrival, it was because

everything necessary in this connection had been said in the report of the Committee of which Dr. Monlau had been the reporter.

Dr. Maccas adhered to the views he had urged in the Committee. To reckon the days of the voyage as days of quarantine would be equal, in his opinion, to placing ships on the same footing as lazarettos in the point of view of purification. Now, this was inadmissible, inasmuch as it was opposed to the frequently expressed opinion of the Conference. Dr. Maccas stated that he was not opposed to a slight reduction of the period of quarantine after a long and prosperous voyage, when there was a physician on board, and when no suspicious accident occurred during the voyage, but could the guarantees enumerated in the report be considered as sufficient? If it was seen, by what had occurred last year at Constantinople, that unlimited confidence could not always be placed in the declarations of ships' doctors, could the complete application of the measures of hygiene and disinfection to be taken both before and after the departure of a ship, and notably the washing of the passengers' linen before their embarkation, be seriously admitted to be practically possible? And lastly, could any greater reliance be placed upon the results to be expected from the medical visit? Dr. Maccas, who did not believe it, protested beforehand against the decision of the Conference, if it should adopt the conclusions of the report.

M. Keun was of opinion that nobody should be bound by the declarations of ships' doctors except the sanitary authorities of countries where a sanitary penal code existed with provisions against false declarations.

The President put the 13th section to the vote. It was adopted, text and conclusions, by a majority of 12 to 9, five members declining to vote.

Ayes:—Count de Noidans, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Goodeve (under reserve with regard to the last sentence and whatever was opposed to the opinions expressed by him relative to the previous chapters), Dr. Dickson, Dr. Sawas, Dr. Bykow, M. Stenersen, Dr. Baron Hübsch, H. E. Salih Effendi, and Dr. Bartoletti.

Noes:—M. Vetsera, Dr. Sotto, Dr. Monlau, M. Kalergi, Dr. Maccas, Professor Bosi, M. Keun, Dr. Millingen, and Dr. Pelikan.

Declined to vote:—M. Dumreicher, Dr. Salvatori, Chevalier Pinto de Soveral, Baron Testa, and Dr. Mühlig.

With the view of anticipating the various interpretations that might be given of his abstention, Dr. Mühlig stated that he was not opposed to the principle of reckoning, in certain cases, the duration of the quarantine from the date of departure, but he considered that the application of this principle was dangerous when only ten days of quarantine were admitted, a period as to the insufficiency of which he had already expressed his opinion.

The 14th section was read.

Dr. Dickson desired that the word *rigorous* might be struck out of the conclusion: if the performance of quarantine on board was allowed, there was no longer any question of a rigorous quarantine.

The 14th section was put to the vote and adopted unanimously, with the exception of M. Dumreicher, who declined to vote. Dr. Dickson voted under reserve.

The 15th section was read.

Dr. Fauvel said he would vote for this section, but he disputed the accuracy of the assimilation established by the report between arrivals by land and arrivals by sea, and on which it rested in consenting to the reduction of the quarantine applicable to the former, in certain cases, to eight days.

Dr. Sawas replied that the Committee, without meaning to establish an assimilation which was impossible, had merely taken into consideration certain conditions peculiar to arrivals by land. Every contaminated ship itself became a choleraic focus in the midst of which and of confined air her passengers stayed, and the air too was often vitiated by the clothes of the passengers, and sometimes too by the vicinity of persons suffering from cholera and from diarrhœa, who could easily travel by sea, and who must be kept on board. Now, these were evidently unfavorable circumstances, which did not occur in a land journey. On land every cholera patient was necessarily compelled to stop *en route*, and even persons suffering from diarrhœa could with difficulty endure the fatigues of the journey; and as caravans travelled in the open air, the æration, which constituted one of the surest means of disinfection, was effected naturally. Dr. Sawas repeated that no sort of assimilation had been thought of, but if it were impossible to accord to arrivals by land, whatever might be the length of their journey, the exceptional facilities allowed in favor of certain classes of ships, it was not to be forgotten that land lazarettos were far from being so well established as maritime lazarettos. This alone, in the opinion of Dr. Sawas, would justify the reduction of the quarantine to eight days for arrivals by land whose stay in insufficient establishments, when no danger could result from them, it was useless to prolong.

M. Bosi was opposed to the reduction of the quarantine for arrivals by land. This quarantine, if it were once deemed possible to maintain it, ought to be as serious as that to which maritime arrivals were subjected. M. Bosi cited some facts observed last year during the epidemic in Italy, which seemed to him to demonstrate the necessity of maintaining the duration of the quarantine at ten days at least.

Dr. Bartoletti, replying to a question put by Dr. Fauvel, remarked that, in the opinion of the Committee, the reduction of the period of quarantine for arrivals by land could not be thought of unless they were exempt from cholera.

Convinced as he was of the danger that was generally attendant upon the diminution of quarantines, Dr. Maccas said he was no partisan of the reduction consented to by the Committee for arrivals by

land. He believed, however, it was his duty to explain under what conditions it deemed such a reduction possible. It was necessary that the travellers should arrive at the lazaretto in good condition, and moreover, that the duration of the journey from the time of their departure from the contaminated place should have been three days' march, pilgrimages and movements of troops being always excepted.

Dr. Dickson said he had not the least confidence in the efficacy of land quarantines, for which reason he had refrained from taking any part in the discussion.

The 15th section was put to the vote and adopted by 15 votes against 5, who declined to vote.

Ayes :— Dr. Sotto, Count de Noidans, Dr. Monlau, Dr. Spadaro, Count de Lallemand, Dr. Fauvel, Dr. Salvatori, Dr. Millingen, Dr. Sawas, Baron Testa, Dr. Pelikan, Dr. Bykow, M. Stenersen, His Excellency Salih Effendi, and Dr. Bartoletti.

Declined to vote :—Chevalier de Dumreicher, Dr. Goodeve, Dr. Dickson, Dr. Maccas, and Professor Bosi.

The 16th section was read. (Question of *disinfection.*)

Having given his opinion, when the general report was under discussion, against the possibility of the transmission of cholera by merchandise, regarded as such in its proper signification, *viz.*, goods proceeding from manufactories and well packed, Dr. Bykow did not believe that disinfection was necessary, except for drills and rags.

And similarly, as he had not admitted that living animals could retain the choleraic germ in their skin and transmit it to men, Dr. Bykow added that he would vote against the 4th paragraph of the section under discussion.

Dr. Mühlig was of opinion that the ship's well (1st paragraph) ought to be disinfected previous to emptying it; moreover, as fumigations were now considered the least efficacious of all modes of disinfection, he was opposed to the employment, as recommended by the Committee, of gaseous chlorine in the purification of ships.

Dr. Mühlig then remarked that it was said (paragraph 2) that the aptitude of merchandise to transmit cholera had not as yet been demonstrated as a fact; indeed, the historic review quoted two facts which tended to prove the contrary.

Dr. Bartoletti explained that the Committee had preferred to base its conclusions upon the decisions of the Conference rather than upon doubtful facts.

In reply to the question put by Dr. Goodeve, Dr. Bartoletti explained that the Committee did not believe it was necessary that non-susceptible goods, which had to be subjected to æration, should be previously unpacked.

Dr. Maccas stated that it was understood, the matter having been so decided, that the sanitary authorities, if any supsicion existed in their

minds, had always the right of opening cases stated to contain non-susceptible goods, in order to verify their contents.

The only susceptible goods being rags, skins, and other substances which were never packed, Dr. Bartoletti remarked that the verification was useless.

Dr. Fauvel did not see the necessity of retaining first class goods during the whole period of the quarantine : they might be given up before its termination without inconvenience, and the sanitary authorities ought to be allowed to do so on their own responsibility. Ventilation during the whole period of quarantine, on the other hand, did not seem to him to be either the best or the most rapid of the means that might be employed for the disinfection of cases and coverings, and the Committee, in his opinion, would have done better not to have gone into particulars.

Dr. Goodeve having asked what mode would be employed in disinfecting letters and despatches, and notably Indian correspondence, which was forwarded in closed boxes, Dr. Fauvel replied that letters and despatches passed in transit, and that every Government might adopt such means as it thought best for the disinfection of the correspondence received.

Dr. Monlau was of opinion that the use of chlorine should be abandoned in the disinfection of letters; the addresses became obliterated if the letters remained exposed a little too long to the action of that disinfectant.

The 16th section was put to the vote and adopted unanimously, with the exception of Dr. Goodeve, who declined to vote. M. de Dumreicher voted under reserve with regard to such parts of this section as were based upon the decisions of the Conference with regard to quarantines. Dr. Maccas and Dr. Bykow also voted under reserve with regard to the points they had brought to notice, and so did Dr. Millingen as regarded the 4th paragraph.

The 17th section (chapter V) was read.

Dr. Monlau, who pointed out that, as a matter of fact, the *suspicious bill of health* had had no existence since its suppression by the Paris Conference in 1861, believed that the bill ought to receive no sort of qualification at the time of departure. As bills might vary during the progress of the voyage in the event of communication with an infected place, or of suspicious changes in health occurring on board, this matter ought to be left to the sanitary authorities of the port of arrival. In the opinion of Dr. Monlau, who regretted that the Committee had not treated this important question at greater length, there ought to be four different kinds of bills, *viz.*, 1*st*, the *clean bill* when the ship, coming from a healthy locality, was in good egyinich condition; 2*nd*, the *suspicious bill*, when there were reasons for keeping a ship under suspicion, even though coming from an uninfected place; 3*rd*, the *foul bill*, when the ship came from a contaminated place, but no accidents had occurred during the voyage; 4*th* and

lastly, the *aggravated bill*, when the ship came from a contaminated place, and cases of cholera had occurred during the passage.

Dr. Monlau also asked what the Committee meant by *sanitary circumscription* of the place of departure. In Spain a radius of six leagues was meant. Dr. Monlau remarked, at the same time, that there was no longer any reason for having sanitary circumscriptions since the establishment of railways.

Dr. Bartoletti remarked that the sanitary circumscription comprised localities sufficiently near the place of departure to allow of the sanitary authorities being equally and exactly informed of all facts interesting to the public health occurring in them.

The 17th section was put to the vote and adopted unanimously.

The 18th section was read.

Dr. Favuel called the attention of the Conference to the inconveniences resulting from the custom that had prevailed of not commencing to note the existence of cholera upon the bills of health until the epidemic was confirmed, and of neglecting the first cases which were qualified as *sporadic*, as if the first cases marking outbreak of an epidemic were not of the same nature and quite as dangerous, in the point of view of transmission, as those that succeeded them. This usage dated from a period when people were not as yet properly instructed as to the transmissibility of cholera, and when the word *sporadic*, as applied to cholera, was opposed to *endemic*. But at a later period, by strange abuse of language, the word *sporadic*, which signified only *isolated* cases, in *small numbers*, was adopted as a qualification of the disease to be opposed to the word *Indian*, sporadic cholera being taken to signify *cholera nostras*, *i. e.*, non-transmissible. Now, this led to dangerous confusion in practice; and this was why Dr. Fauvel would wish the Conference to express the wish that the word *sporadic* should not be used in bills of health, in which only the existence of *Asiatic cholera* or *cholera nostras*, as the case might be, should be mentioned.

As for the period when mentioned of Asiatic cholera should first be made in the bill, Dr. Fauvel concurred in the opinion expressed by the Committee upon the subject.

Dr. Bartoletti remarked that Dr. Fauvel's proposition was in every point conformable to the views of the Committee.

The entire Conference concurred in the proposition.

The 18th section was put to the vote and adopted unanimously.

The 19th section was read.

Dr. Monlau pointed out that the consular patent, which the Committee required should be done away with, supplied the means of controlling the correctness of the bill delivered by the sanitary authorities, who were sometimes interested in delaying the official announcement of an epidemic, and, therefore, it was not without use in this respect.

Dr. Bartoletti and Count de Lallemand replied that it was necessary to prevent the same ship from being furnished with several bills of health. The consular *visa* would do quite as well as the consular bill, to control the declarations of the sanitary authorities.

Count de Lallemand added that the sanitary authorities of the place of arrival ought always, when there was any variation in statements, to accept the gravest declaration. This was what had been decided by the Conference of 1861.

The 19th section was put to the vote and adopted unanimously, with the exception of M. Dumreicher, who declined to vote.

The 20th and last section was also adopted in the same manner.

The Conference heartily concurred in Dr. Fauvel's motion of thanks to be offered to Dr. Bartoletti, the author of the report which had just been discussed, as well as to all the members of the Committee.

The meeting terminated at 5 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

No. 91, dated 17th July 1867.

From—The Secretary of State for India.

To—His Excellency the Right Hon'ble the Governor General of India in Council.

In continuation of my Despatch of the 8th May last, No. 44, I herewith transmit a copy of Protocol No. 44 of the Proceedings of the Cholera Conference at Constantinople with an Index and Title page (the latter being adapted for two volumes) to the completed sets of Protocols. I also forward a copy of the final Act of the Conference; these several documents have been sent to this office by desire of Her Majesty's Secretary of State for Foreign Affairs.

2. Protocols, Nos. 42 and 43 were despatched to your Government by the mail of the 10th ultimo.

INTERNATIONAL SANITARY CONFERENCE. SITTING No. 44, OF THE 23RD OF SEPTEMBER 1866.

HIS EXCELLENCY SALIH EFFENDI, *President.*

In the year 1866, on the 26th of September, at noon, the Conference held its 44th sitting in the usual place of meeting at Galata-Serai.

PRESENT:

For Austria:

M. Vetsera, Councillor to His Imperial Majesty's Internonciature.

Dr. Sotto, Physician attached to His Imperial Majesty's Internonciature, Director of the Austrian Hospital.

For Belgium:

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

For Denmark:

Chevalier Dumreicher, Consul-General to His Majesty the King of Denmark at Alexandria.

For Spain:

Dr. Monlau, Member of the Superior Board of Health of Spain.

For the Papal States:

Monseigneur Brunoni, Archbishop of Jaron, Vicar-Apostolic at Constantinople.

Dr. Ignace Spadaro.

For France:

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, French Sanitary Physician.

For Great Britain:

Dr. Goodeve, Surgeon-Major of the Indian Army, and Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, and Delegate from Great Britain to the Superior Board of Health at Constantinople.

For Greece:

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor of Medicine in the University of Athens.

For Italy:

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Board of Health at Constantinople.

For Persia:

Mirza Malkom Khan, Aide-de-Camp General of His Majesty the Shah, Councillor to His Legation.

For Portugal:

Chevalier Edward Pinto de Soveral, Chargé d' Affaires.

For Prussia:

Baron Testa, Delegate from Prussia to the Superior Board of Health.

Dr. Mühlig, Physician to the Legation, and Chief Physician of the Ottoman Marine Hospital.

For Russia:

Dr. Pelikan, Minister of State, and Director of the Civil Medical Department in Russia.

Dr. Bykow, Councillor of State, and Joint Military-Medical Inspector of the Arrondissement of Wilna.

For Sweden and Norway:

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation at Constantinople.

Dr. Baron Hübsch.

For Turkey:

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople and Chief of the Medical Staff.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Service, and Member of the Superior Board of Health at Constantinople.

(For Egypt:)

Dr. Salem Bey, Professor of Clinical and Medical Pathology in the Cairo School of Medicine, and Private Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

His Highness A'ali Pacha, Minister of Foreign Affairs, was introduced by the President of the Conference.

His Excellency the President gave permission to speak to Count de Lallemand, President of the Commission entrusted with the duty of drawing up a statement of the conclusions adopted by the Conference. Count de Lallemand read over the Report of the Commission (*vide* annexation to the present proceedings.) After the reading of this report or concluding statement, His Highness A' ali Pacha made the following speech :—

"GENTLEMEN,—On the day on which I had the honor of being present at your first sitting, I expressed to you the conviction of my August Sovereign and of His Government that you would accomplish with sucesss the high mission which had been entrusted to your lights.

"You have fully justified that conviction, Gentlemen. The scourge which afflicts humanity since so many years, and the means of preserving it from this scourge, have never been the object of such deep and also conscientious studies, as those which you have now concluded

Your labors will remain as a monument, and you can reckon on the blessings and gratitude of the whole world. Our wishes from this time forward can only be expressed for the realisation of the ideas you have brought forward; and I am able to assure you that the Sublime-Porte, in taking them into serious consideration, will do her utmost to facilitate their being carried out.

"I seize this opportunity to repeat to you once again that the Sublime-Porte is glad that the capital of the Empire was chosen for the meeting of a Conference whose deliberations will not fail, we are certain, to lessen, if not cause to disappear, entirely the terrible disease, which, up to the present time, has caused such fearful ravages. I have only now to thank you on the part of His Majesty the Sultan for the enlightened care with which you have fulfilled the task which was confided to you.

"I also particularly thank the Conference for having displayed so much good-will in the solution of the sanitary question which especially concerns the Imperial Government, and which refers to a reform in the tariff of the sanitary dues in the Ottoman ports.

"I trust, Gentlemen, that a diplomatic understanding will be soon established between the different Governments, for the purpose of fixing an equitable adjustment on that head."

Count de Lallemand, in making himself the exponent of the feelings with which his colleagues are animated, expressed in feeling terms the grateful acknowledgment of the entire Conference, for the generous hospitality it had received from the Imperial Government, and for the friendly courtesies for which it was indebted to His Highness the Minister of Foreign Affairs.

M. Fauvel asked His Highness to allow him to say a few words.

He thought that he expressed the wishes of the entire Conference in bringing to the favorable notice of the Imperial Government and of His Highness particularly, Dr. Naranzi, who had discharged the duties of Secretary to the Conference with a great deal of zeal and ability, and who had greatly contributed to the elucidation of many questions by his able and precise reports of its debates.

The reward, M. Fauvel went on to say, which the Conference sought to obtain for M. Naranzi was, that the Government should confirm him in the appointment which he held provisionally on the Board of Health where, in order to assist their deserving colleague Dr. Bartoletti, on whom had devolved one of the most important duties of the Conference, he had kindly, for several months, discharged the duties of secretary. The post of secretary to the Superior Board of Health, said M. Fauvel, requires a man well versed in sanitary affairs; and M. Naranzi has acquired the necessary experience owing to the duties he has just discharged both in the Conference and on the Board too. Besides, it is quite indispensible that Dr. Bartoletti should be lightened of the burden of reporting the minutes of the Board, in order

that he may be able to devote entirely his great experience to the improvements of the sanitary service, which are a natural result of the labors of the Conference.

In support of the wish expressed by M. Fauvel, all the Delegates declared that they fully approved of the favor he had solicited for M. Naranzi.

His Highness A'ali Pacha, in reply to M. Fauvel, said, that he was happy to hear him speak in such terms of M. Naranzi, whom the Ottoman Government had proposed as secretary to the Conference.

His Highness the Minister of Foreign Affairs assured the Conference, that he would have much pleasure in bringing M. Naranzi to the favorable notice of His Majesty the Sultan, and that he would not fail to inform the Government of the favor which the Conference, through M. Fauvel, had just solicited for him.

Whereupon His Highness the Minister of Foreign Affairs declared the Conference to be closed and withdrew. His Excellency the President authorised the secretaries to proceed with the reading of the minutes of the last two sittings.

They were adopted unanimously.

Count de Lallemand begged His Excellency the President to sign the concluding statement which he had read over, in order that all the Delegates might sign it before they separated.

M. Maccas proposed that they should be allowed to sign it also for the Delegates who were not present. M. Pinto de Soveral opposed this motion, and declared that he would consider as illegal every signature affixed to the concluding statement after the closing of the Conference.

As far as he was personally concerned, he did not mean to sign it for his colleague Dr. Gomez, notwithstanding that he was well aware of the purport of the concluding statement previous to his departure from Constantinople.

They could only sign for the Delegates who were not present except by special authority received from them and by proxies accepted by the Conference.

As none of the Delegates had received this authority, M. de Soveral still adhered to his opinion, namely, that none but the Delegates present at the sitting should be allowed to sign.

After having heard the opinion of several Delegates, the Conference decided to leave the concluding statement still open for three days with M. Naranzi, in order that those Delegates, who were not present at the sitting, and who had not as yet left the capital, might have the opportunity of signing it.

MM. Segovia and Kalergi, being still in the country, they would be asked to sign the concluding statement. There would be then thirty-one signatures affixed to it.

It was then signed by twenty-nine Delegates. M. Bartoletti, having received permission to speak, then said :—

"I fully concur in the wish expressed by the Conference with regard to our worthy secretary M. Naranzi. As Delegate of the Sublime-Porte, I think that I am expressing the feelings of the entire Conference in proposing, that it should return a well-earned vote of thanks to his colleague Baron de Collongue, who shared with him with so much zeal and distinction the onerous and delicate duty of reporting the minutes of the Conference."

His Excellency then addressed the meeting as follows :—

"GENTLEMEN,—After eight months of unremitting and arduous labor you have accomplished your task.

"You have conscientiously carried out the scientific as well as humane mission confided to you by your Governments, and you have erected a grand scientific monument which bears irrefutable testimony to your intelligence, and at the same time, to your zeal and devotion in the cause of humanity.

"Having been elected by you to direct your difficult labors, you made my task less difficult and more easy by giving me your valuable assistance and powerful support.

"I shall always have a lively recollection of the pleasant hours devoted to study in common with you, for several months, and I shall always retain a sympathetic and affectionate feeling for the illustrious assembly over which I have had the honor of presiding.

"As we are on the eve of separating and of taking leave of each other, allow me to hope, Gentlemen, that you share my feelings, and, that it is not without regret, that you leave the Ottoman soil."

His Grace Monseigneur Brunoni in the name of the Conference assured His Excellency Salih Effendi that, in the exercise of his delicate duties, both as President of the Conference as well as first Delegate to the Sublime-Porte, he had won the sympathy and esteem of all his colleagues.

M. Fauvel added that the Conference wished the Sublime-Porte to be informed that His Excellency Salih Effendi had fully justified the confidence placed in him, and that he had won the profound esteem of all his colleagues.

The International Sanitary Conference having accomplished its task then broke up, whilst expressing at the same time the hope that its labors would produce good results.

The meeting dispersed at 4 P. M.

SALIH,
President of the Sanitary Conference.

BARON DE COLLONGUE,
DR. NARANZI, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE.

(ANNEXATION TO MINUTE NO. 44.)

Précis.

Of the conclusions adopted by the Conference in answer to its programme,

Preceded by a Prologue,

Submitted by a Commission composed as follows:—

Count de Lallemand, *President;* Don A. M. Segovia, Count de Noidans, Doctors Bartoletti, Goodeve, Fauvel, and Monlau, *Members.*

The International Sanitary Conference, on the eve of dissolving itself, deems it its duty, before concluding its labors, to append a document which should set forth the spirit with which it was animated, and which should give men in authority and of science, as well as the public in general, a means of acquiring a thorough knowledge of the resolutions adopted by it.

The Conference, which was inaugurated on the 13th day of February of this year by His Highness A'ali Pacha, has ever remained faithful to the spirit which presided at its convocation, and which that Minister defined in a friendly speech, as the spirit of science and of philanthropy. To assist science, and, through her, to serve the interests of humanity and of the public health in general, has been the sole and constant aim of the Conference. As soon as it had met under the presidency of His Excellency Sâlih Effendi, first Delegate from Turkey, and after having settled the mode of voting and the order of the debates, the Conference had to proceed at once to the discussion of an urgent proposition brought forward by two of its members, the Delegates for France, which had in view to preclude, from this very year, the chance of a new importation of Asiatic cholera into Europe by Egypt. It could not put aside with indifference the thought, that at the very time it was consulting on future and perhaps remote means of preservation, cholera might be making a fresh irruption on the shores of the Mediterranean in the wake of the pilgrims returning from Mecca. The Conference, therefore, took the proposition which had been laid before it into consideration, and after a debate which was carried on through four sittings, it was adopted by a majority of 17 votes against 8. (*Vide* minutes Nos. 3, 4, 5 and 6). At the same time, the Conference confided to a Committee the duty of drawing up a programme of its labors.

This Committee handed in its report on the 8th September at the seventh meeting, and the Conference adopted, with the exception of a few additions and transpositions which were deemed necessary, the programme of studies which was laid before it, together with its division into four groups of questions. The fourth, which hardly deserves that name, consists in one single question which is answered by the

present document, and refers to what form to give to the resolutions about to be adopted by the assembly.

The Conference refers to the annexed table for the abstract of the conclusions adopted in answer to the questions in the programme, and confines itself to recording here the judgment which it has formed on the result of its labors.

As to what concerns the first portion of its studies, namely, that which comprises the origin, endemic character, transmissibility and propagation of cholera, the Conference does not pretend to have solved all the problems on these difficult and important points; but it feels satisfied that it has not overlooked any one of them, also, that it has not propounded any rash conclusions, and lastly, that it has clearly indicated what are the necessary steps to be taken hereafter.

With regard to the second portion of its labors, the Conference feels more confident. It is of opinion that if the measures which it recommends are not even entirely and completely carried out, which it can hardly look for, but merely the principal and essential parts of them, the end it had in view will have been attained; that is to say, that the chances of the importation and of the propagation of Asiatic cholera will be reduced to a minimum.

The Conference being confident of the result, in submitting its work to the approval of the Governments who convoked it, implores their powerful support for the same work, which is theirs likewise. Having carefully avoided all matters of a political nature, as it was bound to do, the Conference confidently hopes that no other interests but those of the public health will be brought to bear against a perfect understanding being established between them, which is most desirable with a view to mutual preservation. It, therefore, with profound respect for the Governments, their knowledge and their philanthropical intentions, invites them to come to an understanding, as a measure of forethought, for the safety of nations.

PRECIS OF THE CONCLUSIONS.

First Group of Questions.

Origin and genesis of Cholera, its endemic and epidemic character in India.

Conclusions.

Asiatic Cholera, that which has repeatedly overrun the world, takes its origin in India where it sprang from, and where it exists in an endemic form.

Adopted unanimously. Minute No. 14, page 4.

The Conference considers that it is clearly shown that invading Asiatic cholera has never developed itself spontaneously, and has

never been observed in an endemic form, in any of the countries just enumerated, *viz.*, Europe, &c., (secondary foci which are more or less tenacious are not comprised among these,) and that it has always been imported into these countries. With regard to those bordering on India, whilst admitting that it is improbable that cholera exists in them in an endemic form, yet the Conference does not consider itself authorised to come to any decided conclusion on that point.

Adopted by 19 votes against 2. Minute No. 16, page 11.

The Conference, without completely setting aside the possibility of cholera becoming acclimatized in our countries, still considers it as unlikely.

Adopted unanimously. Minute No. 16, page 11.

Asiatic cholera does not appear to spring from a primitive focus in the Hedjaz, but it seems to have been regularly imported into it up to the present time.

Adopted by 19 votes; none against. MM. Dickson, Goodeve and Monlau abstained from voting.

Minute No. 17, page 9.

With regard to the endemic character of cholera in India, the Conference can only reply, that there are certain localities in India, chiefly comprised in the valley of the Ganges, where cholera exists in an endemic form, without its being possible to particularise them, or to assert that they alone possess the privilege of giving birth to this malady.

Adopted unanimously. Minute No. 17, page 9.

With regard to the causes of the endemic nature of cholera, the Conference replies that it does not know the special conditions under the influence of which cholera has its birth in India and exists there in certain localities in an endemic form.

Adopted unanimously. Minute No. 17, page 9.

With regard to the causes which combine to develop and propagate epidemics of cholera in India, the Conference is of opinion that pilgrimages are, in India, the most powerful of all the agents which combine to develop and propagate epidemics of cholera.

Adopted unanimously. Minute No. 17, page 10.

Second Group of Questions.

Transmissibility and propagation of Cholera.

1*st.*—Proofs of the transmissibility deduced from the march of epidemics of cholera.

Conclusion.

Do not all the facts adduced from first to last clearly show that cholera is propagated by man with a rapidity which has become greater in proportion as his own facilities of migration have become

greater and more rapid? The Conference without any hesitation replies that such is the case.

Adopted unanimously, with the exception of M. Monlau who abstained from voting. Minute No. 18, page 7.

2*nd.*—Proofs deduced from facts establishing the propagation of cholera by importation.

3*rd.*—Proofs deduced from the progress of epidemics of cholera in infected localities.

4*th.*—Proofs deduced from the efficacy of certain preventive measures.

The portion of the text relating to these proofs was adopted by 21 votes. MM. Segovia, Monlau, Malkom, Sawas and Gomez, abstained from voting. Minute No. 18, page 8.

General conclusion of the Chapter.

The Conference is of opinion that the transmissibility of Asiatic cholera is an undeniable fact, proved by facts which do not admit of any other interpretation.

Adopted unanimously. Minute No. 18, page 8.

With regard to the propagation of cholera by means of the atmosphere, the Conference replies, that not a single fact has been adduced as yet to show that cholera may be propagated to a distant spot by the agency of the atmosphere alone, under any conditions whatsoever; and, moreover, that it is an established rule, without one single exception, that no epidemic of cholera has ever spread from one spot to another in less time than it would take man to reach it too.

Adopted unanimously. Minute No. 18, page 8.

In what way is the importation of cholera effected, and what are the agents of transmission?

Man attacked with cholera is, in his own person, the chief propagating agent of this malady, and one single cholera patient can originate the development of an epidemic.

Adopted unanimously. Minute No. 18, page 8.

The Conference has come to the conclusion, that certain facts tend to prove that one single individual (the more so if there are several) coming from an infected place, and suffering from diarrhœa, will suffice to give rise to the development of an epidemic of cholera, or, in other words, that the so-called premonitory diarrhœa can transmit cholera.

Adopted unanimously, with the exception of M. Millingen. Minute No. 18, page 9.

Conclusion.

In nearly every case, the period of incubation, that is to say, the time which elapses between the moment that an individual has contracted the cholera poison and the commencement of the

premonitory diarrhœa or confirmed cholera, never exceeds a few days. All the facts brought forward of a longer incubation refer to cases which are by no means conclusive, either because the premonitory diarrhœa was included in the period of incubation, or because contamination may have taken place after the departure from the infected spot.

Adopted by a majority of 20 votes against 1, that of Salem Bey MM. Millingen, Malkom Khan and Sawas abstained from voting. Minute No. 18, page 10.

With regard to the question whether cholera can be imported and be transmitted by living animals, the Conference replies as follows:—There is no known fact to show that cholera has ever been transmitted by living animals; it is proper notwithstanding to consider them, in certain cases, as of objects capable of doing so.

The first portion of this conclusion was adopted unanimously; the second by 16 votes against 8; 3 abstained from voting. Minute No. 18, pages 14 and 15.

In answer to the question whether cholera can be imported and be transmitted by means of wearing apparel, rags, &c., the Conference replies, that cholera can be transmitted by means of clothes in wear coming from an infected place, and especially by those which have been made use of by people suffering from cholera; and that there are facts to prove that the malady can be transmitted to a distant place by means of these same clothes when kept packed up and not exposed to the action of fresh air.

Adopted by 21 votes against 2, (MM. Dickson and Stenersen); 2 did not vote (MM. Keun and Lenz). Minute No. 19, page 9.

With regard to the influence of deserts, the Conference, depending on facts demonstrated by experience, is of opinion, that large deserts are a very efficacious barrier against the propagation of cholera, and it admits that there is no case on record to show that cholera has ever been imported into Egypt or Syria, across the desert, by caravans coming from Mecca.

Adopted by 22 votes. MM. Polak, Monlau and Maccas abstained from voting. Minute No. 20, page 13.

On the influence af assemblages.

The Conference replies in a general way, that all assemblages of men, in which cholera makes its appearance, offer favorable conditions for the rapid spread of the malady, and also for the outbreak of a violent epidemic, should the assemblage be laboring under bad hygienic conditions. That, in such a case, the rapidity with which the disease spreads itself is in proportion to the concentration of the assembled mass, whilst the violence of the epidemic is, under similar circumstances, greater in proportion as the individuals forming the whole mass have been less under the influence of cholera, or have remained uninfected; that is to say, in other words that

individuals who have been already under the influence of a cholera focus have the advantage of a sort of comparative and temporary immunity which counterbalances the grievous effects of crowding. Lastly, that the more rapidly an assembled mass disperses itself, the sooner will the epidemic disappear, unless new healthy arrivals should come and furnish fresh food for the malady, and thus keep it alive.

Adopted by 20 votes. MM. Segovia and Monlau abstained from voting. Minute No. 20, page 15.

With regard to goods, the Conference, whilst certifying unanimously to the absence of proof in support of the transmission of cholera by means of goods, admits, (by a majority of 16 votes against 5 and 3 who did not vote) that they are capable of doing so under certain conditions.

In summing up what has been said in the preceding paragraphs, the Conference, till more precise information can be obtained, is of opinion that it would be right to consider as suspicious everything coming from a cholera focus, unless fulfilling certain specified conditions.

Adopted by 14 votes; 10 did not vote. Minute No 19, pages 12 and 13.

With regard to the corpses of persons affected with cholera, the Conference replies: that although it is not shown by conclusive facts that the corpses of persons affected with cholera can transmit it, yet it is right to look upon them as dangerous.

Adopted by 22 votes. M. Sawas did not vote. Minute No 20, page 5.

On the influence of means of communication.

The Conference is of opinion that means of communication by sea are naturally the most dangerous; that they transmit cholera to distant places with more certainty than any others; that after them come railroads, who have it in their power to transmit the malady to places at a great distance, in a very short space of time.

Adopted unanimously. Minute No. 20, page 5.

With regard to ships, the Conference is of opinion, that the violence of epidemic of cholera on board ships crowded with men is, in general, in proportion to the crowding, and that it becomes greater likewise, should these men happen not to move out of a cholera focus in which they have remained for some time; that the spread of epidemics of cholera on crowded ships is usually rapid. Lastly, the Conference adds that the danger of importation by ships, and that of giving rise to a serious epidemic do not depend entirely on the violence or even the

existence of certified cases of cholera on board a ship during its passage.

Adopted by 19 votes; none against. M. Maccas abstained from voting. Minute No. 20, page 18.

With regard to lazarettos, the Conference is of opinion that the crowding of individuals coming from a place infected with cholera, in a lazaretto does not cause any great spread of the malady amongst those undergoing quarantine, but that such an assemblage is nevertheless very dangerous for the neighbourhood, as it is likely to favor the propagation of cholera.

Adopted by 15 votes; none against. M. Monlau abstained from voting. The other members were absent. Minute No. 20, page 20.

Regarding large assemblages of men, the Conference is of opinion, that large assemblages of men (armies, fairs, pilgrimages,) are the surest agents of the propagation of cholera; that they become immense epidemic foci which, whether they march in the same way as an army, or whether they scatter themselves over the country like fairs and pilgrimages, are sure to import the malady into the countries through which they pass; that these assemblages, after having been subjected, usually in a very rapid manner, to the influence of cholera, become less sensitive to its influence, and that it even disappears very rapidly from amidst them, unless fresh arrivals should come to keep the malady in existence.

Adopted unanimously (22 votes.) Minute No. 21, page 6.

With regard to the influence of dissemination, the Conference is of opinion, that the dissemination of an assemblage, if effected in time, may render an epidemic of cholera which has just appeared in the midst of it less violent, and may even prevent it from spreading; but that this dissemination, on the contrary, would give rise to the danger of propagation, should it be effected in the midst of still uninfected countries.

Adopted unanimously (22 votes.) Minute No. 21, page 9.

With regard to the part performed by the pilgrimage to Mecca, the Conference is of opinion that the part performed by the pilgrimage to Mecca as propagating agent of cholera in connexion with the countries bordering on Europe (the only ones concerning which we have any positive information) has been, that of importing this malady into Egypt twice, with an interval of 34 years, during the hot season.

Adopted unanimously (22 votes.) Minute No. 21, page 9.

On the influence of hygienic conditions.

In conclusion the Conference admits, that the hygienic conditions and the other conditions which in general predispose a popula-

tion to contract cholera, and which consequently favor the intensity of epidemics are: want with all its consequences, the accumulation of individuals, their sickly condition, the hot season, want of air, the exhalations of a porous soil impregnated with organic matter, especially if this matter proceeds from choleraic dejecta. Further, the Conference is of opinion that, as it appears to be demonstrated by experience that the dejecta of people suffering from cholera contain the generating principle of cholera, it cannot err in admitting that drains, water-closets, and the contaminated water of towns, may become the propagating agents of the malady. The Conference adds that it is demonstrated by certain facts that the soil of a place, when once impregnated with choleraic *detritus*, has been known to preserve for a considerable time the property of evolving the principle of the malady and of thus keeping up an epidemic, or even of re-kindling it when it was extinguished.

Adopted unanimously (19 votes.) Minute No. 21, page 14.

On immunity with regard to Cholera.

In conclusion, the immunity enjoyed by certain places, in other words, the resistance, either permanent or temporary, general or partial, offered by certain places to the development of cholera within their limits, is a fact which does not do away with transmissibility, but which indicates that certain local conditions, not yet all recognized, form an obstacle to the development of the malady.

In the same way the immunity, more or less entire, or more less lasting, enjoyed by most people placed in the centre of a focus of cholera, and which shows the individual resistance to the toxic principle, is a circumstance we ought by no means to overlook.

With regard to epidemic development, immunity is the corrective of transmissibility, and with regard to prophylaxy, it points out certain measures which conduce to keep the ravages of the malady within bounds.

Adopted by a majority of 21 votes against 1, M. Sawas. MM. Monlau, Maccas and Stenersen abstained from voting. Minute No. 22, page 15.

Deductions relating to the attributes of the generating principle of Cholera.

To sum up, the opinion of the Conference is that, in the present state of science, nothing but hypotheses on the nature of the generating principle of cholera can be given. We only know that it springs from certain countries in India, and that it remains there permanently; that this principle regenerates itself in man, and accompanies him in his travels; that it can thus be propagated to a distance, from land to land, by successive regenerations, but without ever reproducing itself spontaneously outside of man himself.

Adopted unanimously (25 votes), with the exception of Dr. Goodeve, who abstained from voting. Minute No. 22, page 15.

With regard to the vehicles of the generating principle of cholera, the Conference is of opinion, that the circumambient air is the principal vehicle of the generating agent of cholera, but the transmission of the malady by the atmosphere is, in the immense majority of cases, limited to a certain distance very close to the focus of emission. With regard to the facts cited as to the transport by means of the atmosphere to a distance of one or several miles, they are not sufficiently conclusive.

Adopted by a majority of 24 votes; none against. M. Sawas abstained from voting. Dr. Goodeve voted under reserve relating to the distance. Minute No. 22, page 16.

According to the opinion of the Conference, water and certain ingesta may also serve as vehicles to the introduction into the organisation of the generating principle of cholera.

That being admitted, it necessarily follows that the duets through which the toxic agent penetrates into the system, are principally the respiratory duets and very probably, too, the digestive duets. With regard to penetration through the skin, no fact can be adduced in support.

Adopted unanimously. Minute No. 22, page 17.

With regard to the principal receptacles of the choleraic germ, the Conference is of opinion that the matter contained in choleraic dejecta being without any doubt the principal receptacle of the morbific agent, it follows that everything that is contaminated with these dejecta becomes also a receptacle from which the generating principle of cholera can evolve itself, under the influence of favorable conditions. It follows, again, that the reproduction of the choleraic germ is effected very likely in the digestive duets alone, perhaps, and not in any of the others in the system.

Adopted unanimously (26 votes.) Minute No. 22, page 17.

With regard to the duration of the morbific activity of the germ out of the system, the Conference replies that the study of facts shows that the generating principle of cholera rapidly loses its morbific activity in the open air, and that it is generally the case; but that in certain cases when confined, this activity may be prolonged to an indefinite time.

Adopted unanimously (25 votes.) Minute No. 22, page 17.

With regard to the duration of choleraic diarrhœa, the Conference declares that from observations made we learn that the duration of choleraic diarrhœa, called premonitory,—which ought not to be confounded with all the other diarrhœas which exist during a cholera season,—does not exceed a few days.

The facts adduced being exceptional do not prove that the cases of diarrhœa which exceed that time are either cholera or capable of transmitting the malady, when the individual attacked has been withdrawn from all chances of contamination.

Adopted by 15 votes against 4, MM. Monlau, Millingen, Gomez and Mühlig. MM. Vernoni, Keun and Sawas abstained from voting. MM. de Lallemand and Maccas voted with a reserve regarding the second portion of the conclusion.

REPORT ON THE MARCH AND MODE OF PROPAGATION OF CHOLERA IN 1865.

Conclusions adopted by the Conference.

From the facts observed in 1865, we learn 1*st*, that the propagation of cholera is brought about by the migrations of man, whatever means of locomotion he may employ to effect them; 2*nd*, that propagation is all the more to be dreaded in proportion as the means of locomotion are more rapid and more multiplied; 3*rd*, that under similar circumstances, a large infected mass or one single individual may propagate cholera to a great distance.

THIRD GROUP OF QUESTIONS.

I.

MEASURES OF HYGIENE.

Conclusions.

The Conference replies as follows:—We do not know of any direct means to extinguish endemic foci of cholera, but we may hope to succeed in doing so by carrying out a series of measures together, the foremost of which will be measures of hygiene.

Adopted unanimously. Minute No. 24, page 11.

With regard to naval hygiene, the Conference thinks that the following steps ought to be taken:—

1*st*.—To open to competition, and to award prizes to the authors of discoveries or of improvements which might bring about at once any favorable change whatever in the sanitation of ships, in the improvement of the hygienic conditions of their crews, or in the welfare of the passengers.

2*nd*.—To publish a manual of naval hygiene for the guidance of the mercantile navy of each country. All captains and masters of vessels should be bound to carry out the chief instructions as laid down in this manual.

3*rd*.—To encourage by means of bounties and rewards those shipowners, captains or masters of vessels who have made themselves conspicuous for the proper maintenance of their ships and of their crews.

Adopted unanimously. MM. Millingen, Testa, Mühlig and Salem Bey abstained from voting. Minute No. 29, page 4.

According to the opinion of the Conference during the cholera season especially, we ought to seek to avoid the inconveniences and dangers arising from bad anchoring ground, from badly selected drinking-water and stores, from crowding, from the sanitary condition of the men on board, from the condition of the wearing apparel, from the quality of the goods, from the want of separation of the sick, from the want of ventilation in the ship and of the airing of wearing apparel, and especially from the want of cleanliness in the water closets.

Adopted unanimously. Minute No. 29, page 4.

The Conference is of opinion that the sanitation of harbors, the prohibition to empty the sewers of the town into them, periodical dredging, and an efficient sanitary police kept up within them, are all measures of hygiene of the greatest importance, with a view to preservation from all transmissible maladies in general and from cholera in particular.

Adopted unanimously. Minute No. 25, page 8.

According to the Conference, the sanitation of towns is a preventive measure of the highest importance in order to offer a proper resistance to cholera and to lessen its effects.

The sanitation of towns should depend principally on the carrying out of certain measures together, with a view to preserving the purity of the air, to supplying the towns with plenty of good water, and to preventing the infection of the soil by means of organic matter.

Disinfection on the spot, and the immediate removal of all excrementary matter, are measures of hygiene of the greatest importance, especially in times of cholera.

Adopted unanimously. Minute No. 25, page 11.

According to the Conference, the proper organisation of public assistance,— general preventive visits, or, in their stead, medical inspections of the houses attacked,— immediate succour given to persons attacked with cholera, the publication of the popular instructions, the encouragement arising from the confidence in the promptitude and the extent of the succours given, from the publication of the real state of the epidemic, as well as from the opening of special hospitals and of temporary houses of refuge to give shelter to the families of the poor who are sick, are all of them very efficacious measures of hygiene

and of administration in order to check the propagation of cholera, and to render it less virulent in the places that have been attacked.

Adopted unanimously. Minute No. 26, page 20.

According to the Conference, the temporary interruption of communications with infected places, provided it is complete, is the surest preventive against the transmission of cholera. The timely removal and the methodical dispersion of moveable masses of men (caravans, bodies of troops, &c.) are very efficacious measures of hygiene to prevent cholera from breaking out among them, as well as to prevent it from spreading and to diminish its violence. Timely emigration and well-regulated dispersion, may produce the same favorable results in stationary masses of men (places, public offices.)

Adopted unanimously. Minute No. 27, page 4.

The Conference is of opinion that disinfection applied to cholera, according to a rational method and with perseverance, becomes a powerful auxiliary:

1*st*.—To diminish the power of receiving of a locality threatened with cholera.

2*nd*.—To destroy the germ of the malady imported into a locality; and

3*rd*.—To limit, under certain favorable conditions, the spread of the epidemic.

Adopted unanimously. Minute No. 28, page 10.

II.

Measures to be adopted in the East in order to prevent fresh out-breaks of Cholera in Europe.

Preliminary Questions.

Conclusions.

The Conference is of opinion that restrictive measures, known before-hand, and properly applied, are much less prejudicial to commerce and to international communications than the panic which strikes industry and commercial transactions immediately after an outbreak of cholera.

Adopted by 20 votes; none voted against. MM. Goodeve, Keun and Millingen abstained from voting. Minute No. 30, page 8.

The Conference is of opinion that the closer the quarantine and other prophylactic measures against cholera are applied to the original

focus of the malady the less troublesome in proportion will they prove, and their capability to preserve Europe (supposing them to be properly applied) will be the more depended upon.

Adopted unanimously. Minute No. 30, page 17.

Measures in India.

Conclusions.

The Conference does not think it impossible to succeed in extinguishing invading cholera in India, and it believes at all events that its epidemic development there can be limited. With this double purpose in view, the Conference recognizes the necessity of prolonged study in order to determine the special causes which produce and maintain the endemic character of cholera, as well as the relations existing between this endemic nature and the epidemic explosions, whilst carrying out at the same time the hygienic improvements already begun. With regard to the particular details, this study should embrace, the Conference refers to what has been said above on this subject.

Adopted unanimously. Minute No. 30, page 19.

Regarding Indian pilgrimages, the Conference thinks that in order to oppose the influence of Indian pilgrimages on the development of cholera, it would be necessary to take the following steps :—

1*st.*—To endeavour to reduce the number of pilgrims by compelling them, if possible, before starting, to furnish themselves with a pass which should only be given to those who could prove that they were possessed of sufficient means to supply their wants during the voyage.

2*nd.*—To establish at all the places of pilgrimage a Sanitary Police, capable of carrying out all the measures of hygiene already in force and completed according to the dictates of the experience already acquired.

3*rd.*—In the event of cholera breaking out amongst the pilgrims, to delay the return of the contaminated mass,—provided that such a measure can be carried out—until after the complete cessation of the epidemic in the mass, and after a general disinfection.

Adopted unanimously, with the exception of Dr. Goodeve with regard to the 1st conclusion. Minute No. 31, page 6.

In the opinion of the Conference, it is of the utmost importance to try and prevent the exportation of cholera by sea from India.

To effect this purpose, the Regulations published in 1858, under the title of Native Passengers' Act, would prove one of the surest means if they were applied without any distinction to all flags in all countries, and if they were completed with regard to sanitary precautions. Moreover, all ships leaving a port in India, should be furnished with a

bill of health delivered by the sanitary authorities appointed for that purpose, and who would at the same time have to see that the Regulations relating to the embarkation of pilgrims were properly carried out. In addition, the Conference deems it necessary to ascertain, whether, in the event of an epidemic appearing in any place in India, it would be possible either to forbid, to postpone, or to prevent the embarkation of the pilgrims at that particular place; and lastly, whether, by following the example of the Dutch Government with regard to its Indian possessions, the Government of British India could not possibly compel every Mussulman pilgrim to prove that he was possessed of sufficient means to meet the expenses of his journey and to support his family during his absence.

Adopted unanimously. M. Goodeve reserved his opinion with regard to certain portions of the text. Minute No. 31, page 11.

MEASURES TO BE ADOPTED IN THE INTERMEDIATE COUNTRIES BETWEEN INDIA AND EUROPE.

A.—Measures against the importation of Cholera from India by Sea.

1*st.*—The expediency of having a sanitary establishment at the entrance of the Red Sea.

Admitted by all, with the exception of Dr. Goodeve. Minute No. 31, page 14.

2*nd.*—What should be the nature of this establishment? The Conference thinks that an international character should be a *sine qua non* condition of this establishment. The Governments interested in it would have to fix the nature and degree of assistance each country should afford. It might be taken for granted, for example, that either the Port or the Egyptian Government would assume the direction of this establishment, but only under the control and with the assistance of Europe.

Adopted by 15 votes against 3, *viz.*, MM. Goodeve, Dickson and Bykow. MM. Keun and Millingen abstained from voting. Minute No. 32, page 10.

3*rd.*—Under what circumstances, how and by whom would these measures be applied?

The Conference is of opinion that these measures should be carried out in accordance with an international act which should specify the cases, and by a Commission under the control of the Governments interested in it.

Adopted by 17 votes against 2, *viz.*, MM. Goodeve and Dickson. Minute No. 32, page 13.

Question of the Pilgrimage to Mecca.

1*st.*—Organization of the sanitary service on the shores of the Red Sea.

The Conference is of opinion that the sanitary service it is proposed to organise on the borders of the Red Sea, besides an international lazaretto, together with an enforced stoppage at the Straits of Bab-el-Mandeb, should comprise in addition:

1*st.*—Stations for sanitary physicians, as follows:—Three on the Coast of Africa, at Koséir, Sonakin, and Massowah; and two for the present, on the Coast of Arabia, the principal one at Jeddah, and the other at Yambo.

2*nd.*—Two lazarettos: one at El-Wedge, which should be devoted exclusively to the pilgrims; and the other at Tor, to the ordinary arrivals attacked with cholera.

3*rd.*—A board of health, sitting at Suez, assisted by an International Commission which would settle all questions relating to the sanitary service in the Red Sea.

The two first conclusions were adopted by 14 votes. MM. Goodeve and Dickson voted with a reserve, regarding the place named Tor. At the following sitting several absent members adopted these conclusions:—

The third conclusion was adopted by 18 votes against 4, *viz.*, MM. Goodeve, Dickson, Keun and Bykow. MM. Millingen, Malkom and Salih Effendi abstained from voting.

Minutes No. 32, page 15, and No. 33, page 4.

2*nd.*—Rules for the departure and precautions relating to the embarkation of the pilgrims.

Adopted unanimously, with the exception of a few remarks by MM. Goodeve and Dickson, Minute No. 33, pages 5 and 6.

3*rd.*—Measures of hygiene to be carried out at the places of pilgrimage.

Adopted unanimously. Minute No. 33, page 6.

4*th.*—Can any measures be carried out in the Hedjaz against the importation of cholera by sea or by land? The Conference does not depend in the least on whatever quarantine measures may be carried out in the Hedjaz against the importation of cholera among the pilgrims.

Adopted unanimously. Minute No. 33, page 6.

5*th.*—Measures to be adopted against the arrivals from the Hedjaz, should cholera break out there during the pilgrimage.

The Conference is of opinion that in the event of cholera appearing in the Hedjaz during the time of the pilgrimage, it would be

prudent to interrupt temporarily, that is to say, during the epidemic, all communication by sea between the ports of Arabia and the coast of Egypt.

The proper application of this measure supposes the existence of a sanitary service organised on the shores of the Red Sea, such as the one proposed above; and moreover, the presence of a body of troops sufficiently strong, both to maintain order among the pilgrims and to furnish the Naval Police. With regard to the latter point, it would be very desirable that the Governments interested should come to an understanding in order to ensure the proper execution of the measures prescribed.

Should this be done, the Conference thinks that the measures could be carried out in the following manner, with such modification as the International Commission sitting at Suez, might deem proper, in order to facilitate their application:—

1*st*.—In the event of cholera appearing among the pilgrims, the sanitary physicians of the Hedjaz should inform the local authorities of the fact, and likewise the vessels of war stationed at Jeddah and Yambo.

2*nd*.—On receipt of the declaration made by the above-mentioned physicians, the authorities should make it known to the pilgrims that those who wished to embark for Egypt would be obliged, before getting there, to perform quarantine at El-Wedge, and they should inform them too at the same time that they were at liberty to go by the land-route if they chose.

3*rd*.—The embarkation should take place, under the superintendence of the sanitary authorities according to their established rules, and in whatever ports they may fix upon.

4*th*.—The vessels of war should give their assistance to ensure the proper observance of the rules laid down; they should perform the duties of naval police, and they should keep as strict a watch as possible in order to prevent any unauthorised departures.

5*th*.—On receipt of the intelligence that cholera is raging among the pilgrims, the Egyptian authorities should close all the ports of Egypt to all arrivals from the coast of Arabia, and they should send back all ships arriving from there, to some place on the coast of Arabia, either El-Wedge, or elsewhere, where they might undergo quarantine according to the rules laid down.

6*th*.—The pilgrims taken to El-Wedge, should be kept there in quarantine, and should not be allowed to start for Egypt until fifteen full days after the disappearance of cholera from among them and after disinfection of their clothes and luggage. On leaving El-Wedge the ships conveying them, those bound for Suez, should be obliged to touch at Tor where they should be placed under observation for 24 hours, and be medically inspected with a view to ascertaining the sanitary condition they are in. A clean bill of health and the

permission to proceed on their voyage should only be given to the ships until such time as the sanitary condition on board is reported to be devoid of danger.

7*th.*—With regard to the caravan from Egypt, it should stop as before at its usual halting-place near to El-Wedge; it should be medically inspected there, and it should not receive permission to proceed on its journey until clear of cholera for fifteen days.

8*th.*—With regard to the pilgrims proceeding to India or to other countries beyond the Red Sea, they should be allowed to embark to proceed homewards, but only in conformity with the rules laid down by the sanitary authorities of the port of embarkation.

9*th.*—Communications by sea between the Hedjaz and Egypt should not be re-established for at least fifteen days after the disappearance of every trace of cholera, which should be officially reported by the authorities of Jeddah. But even then, the ships having on board pilgrims bound to Suez, should be always compelled to touch at Tor, and to remain there for 24 hours for the purpose of being medically inspected as mentioned above. The sanitary authorities at Suez should send back to Tor, any ships not having conformed to this rule.

10*th.*—*A proper scale of the penalties incurred, for each breach of the prescribed rules, should be published by the International Commission. The English Regulations (Native Passengers' Act) would form an excellent model for that purpose.*

All the above conclusions were adopted unanimously, with the exception of a few objections made by MM. Goodeve and Dickson, M. Gomez voted for a quarantine of ten days only.

Minute No. 33, page 8.

In the event of an epidemic of cholera appearing in Egypt by way of the Red Sea, whilst Europe and Turkey are still uninfected, would it not be best to interrupt for the time being, all communications by sea from Egypt with the entire basin of the Mediterranean?

The Conference replied in the affirmative, by 13 votes against 3, *viz.*, MM. Goodeve, Dickson and Salem Bey; 4 members abstained from voting.

Minute No. 33, page 15.

B.—Measures against the importation of Cholera from India into Europe by land.

Measures in Persia: organisation of a sanitary service, precautions against pilgrimages, the transport of corpses, &c.

The measures recommended in the Report were adopted unanimously. Mirza Malkom Khan and M. Sawas voted under reserve.

Minute No. 34, page 14.

Measures on the Turco-Persian frontier.

The measures recommended in the Report were adopted by 15 votes; none against. MM. Malkom, Sawas, Keun, Millingen, Gomez and Stenersen abstained from voting.

Minute No. 35, page 7.

Measures against the importation of Cholera by way of Bokhara and the steppes of Tartary.

The text of the Report with a few alterations was adopted unanimously.

Minute No. 35, page 8.

Measures on the Russo-Persian frontier.

The text of the Report was adopted unanimously.

Minute No. 35, page 8.

The summary of the Report was adopted unanimously by the Conference.

Minute No. 35, page 8.

QUARANTINE MEASURES.

III.

Applicable to arrivals suffering from Cholera.

General review of the question of restrictive measures.

Conclusions.

With regard to the restrictive measures employed up to the present time against cholera, the Conference is of opinion that the experience acquired from this first period of quarantine is not of any positive value.

Adopted by 18 votes against 2, *viz.*, MM. Testa and Mühlig, MM. Sotto, Monlau, and Keun abstained from voting.

Minute No. 37, page 12.

The Conference concludes, however, from the facts mentioned in the Report, that it is undeniable that quarantines established on a rational basis in conformity with the progress of science, may form an efficient barrier against the invasions of cholera.

Adopted unanimously. Minute No. 37, page 13.

The basis of the prophylactic system should, in the opinion of the Conference, be as follows:—

1*st.*—To counteract the germs of the malady in their primitive foci, before they have time to disseminate and reproduce themselves outside of them.

2nd.—To establish quarantines according to the present recognised principles of the transmissibility of cholera and of its mode of propagation.

Adopted unanimously. Dr. Goodeve voted under reserve. Minute No. 38, page 12.

Sanitary Cordons, Isolation, Interruption and Restriction of Comunications.

Conclusions.

The Conference is of opinion that sanitary cordons, when established in thickly populated countries, produce an uncertain and often a dangerous result; that, on the contrary, when established in thinly populated and confined countries, such as those of Asia, they may be of the greatest use against the propagation of the malady.

Adopted unanimously, with the exception of Dr. Goodeve who abstained from voting. Minute No. 38, page 17.

The Conference is of opinion: 1*st*, that isolation, wherever it can be applied to the first cases denoting the outbreak of an epidemic, is a measure of prudence which no country should neglect for its now safety; 2*nd*, that the isolation of a locality attacked by cholera is all the more feasible and useful when the population of the country is scattered, and the closer to the starting point of the epidemic the isolation is enforced; 3*rd*, that the isolation of the initial foci is the principal prophylactic measure against the invasions of cholera.

Adopted unanimously. Minute No. 39, page 5.

The Conference thinks that interruption is the best way of isolating choleraic foci; that, consequently, it ought to be resorted to every time that circumstances allow of its being strictly enforced; but that this measure, which is only applicable to confined places, becomes impracticable and useless once the epidemic has spread to any great distance.

Adopted by a majority of 19 votes against 2, *viz.*, MM. Goodeve and Dickson. MM. de Lallemand, Fauvel, and Mühlig voted for the conclusion under reserve. Minute No 39, page 7.

The Conference is of opinion that it would be necessary: 1*st*, to restrict the emigration within the limits of the infected town; 2*nd*, to regulate by a law the number of persons each vessel should carry, in proportion to its tonnage; 3*rd*, to adopt certain necessary precautions with these persons and their baggage, such as medical inspections, purification of their old rags, and clothes, &c.

Adopted unanimously, with the exception of M. Millingen who did not vote. Minute No. 39, page 9.

Question of Lazarettos.

Conclusions.

With regard to the establishment of quarantines the Conference proposes—

1*st.*—That quarantines should be established as often as possible, in uninhabited islands, and, if there are no islands, in isolated places, several miles distant from towns, villages and other inhabited places. The air in the places chosen should be healthy; the soil rocky; water plentiful, the anchorage easy, safe and roomy.

2*nd.*—That the buildings forming part of the quarantine establishment should be constructed according to the plan given in article 7 of the present Report, in such a manner as to ensure the complete separation of the different classes of persons undergoing quarantine, according to the place they have come from and the date of their arrival. That the cholera hospital, the quarantine quarters, the wash-houses, store-houses and sheds, the dwellings of the staff of the establishment, &c. &c., should be completely isolated. That the space between these different buildings, which cannot be fixed beforehand, should be as recommended in paragraph 13 of the Report.

3*rd.*—That necessaries should be established according to the system of moveable sinks charged with disinfectants; that sewers and cesspools should be done away with; that the dejecta should be thrown into pits dug in the ground, and covered over with quick-lime, clay or the dust of vegetable coal.

4*th.*—That each lazaretto should have two landing-stages,—one for the people who are infected, and the other for those who are not; a health-office, lodgings for the superintendents, a guard-house, a bed and furniture store, a provision store, and an hotel.

Adopted unanimously. M. Monlau voted for the 3rd conclusion under reserve. Minute No 41, page 10.

5*th.*—That the parlours in lazarettos should be suppressed for visitors, and no visits to those undergoing quarantine should be allowed, only in exceptional cases and by special permission of the sanitary authorities; that, however, persons might receive permission to enter the lazaretto and remain in it altogether, provided they submitted to the same system of quarantine measures as the persons with whom they may have had communication.

The first portion of this conclusion was adopted by 10 votes against 9, *viz.*, MM. Dickson, Vernoni, Bosi, Keun, Sawas, Mühlig,

Stenersen Hübsch and Bartoletti. The second portion was adopted unanimously, with the exception of 2, *viz.*, M. Mühlig, who voted against, and M. Stenersen who abstained from voting.

Minute No. 41, pages 12 and 13.

6*th.*—That the quarantine establishments should be under the direction of physicians, of whom there ought to be at least three in each lazaretto, and who should be told off as follows: one to the hospital, another to the people in quarantine, and the third to the harbour-service and to the outside of the lazaretto.

7*th.*—That the number of the lazarettos for the rigorous quarantine should be in proportion to the amount of naval traffic and to the extent of sea-coast of each separate State; but that there should be minor stations for the arrivals subjected to a quarantine of observation.

8*th.*—That in very urgent cases, temporary lazarettos, camps, or floating lazarettos, according to the nature of each place should be established.

Adopted unanimously. Minute No. 41, page 13.

9*th.*—Whilst admitting, under certain circumstances, the expediency of establishing international lazarettos under the direction and control of mixed Boards, the Conference thinks that the opening of establishments of this kind cannot be generally recommended.

Adopted by 9 votes against 8, *viz.*, MM. Goodeve, Dickson, Keun, Sawas, Bykow, Stenersen, Salih Effendi and Bartoletti. M. Monlau did not vote. Minute No. 41, page 14.

System of Quarantines and Disinfection.

Conclusions.

With regard to the quarantine of observation and the rigorous quarantine, the Conference is of opinion that the difference between these two systems is that the quarantine of observation is a period of trial, and of survey merely, whilst the rigorous quarantine consists in landing at the lazaretto together with disinfection, and comprises besides all the measures applicable to arrivals suffering from cholera.

Adopted by 21 votes. MM. Maccas and Pelikan voted for the conclusion under a reserve. MM. Sotto, Segovia and Monlau abstained from voting. Minute No. 42, page 17.

The Conference is of opinion: 1*st*, that the rigorous quarantine applicable to persons coming from an infected place should be fixed, as a general rule, at ten full days, and that this quarantine should commence, for these persons, from the moment they have entered the lazaretto. That if, during this quarantine, cases of cholera or of choleraic diarrhœa should occur amongst these persons, the healthy ones, after having been separated from the sick, should be made to begin again their quarantine

of ten full days ; 2*nd*, that the persons ill of diarrhœa should be considered as suspicious; that they should be kept apart from the persons in good health, and likewise from those suffering from cholera ; and that they should not receive pratique at the end of their appointed quarantine, till after the receipt of the medical report certifying to the non-choleraic nature of the diarrhœa.

Adopted by 17 votes ; none against. Four members agreed to it conditionally.

MM. Pelikan and Millingen wished the quarantine to be extended to 15 days, and MM. Keun and Millingen to 19. Minute No. 42, page 26.

The Conference is of opinion : 1*st*, that the ships supposed to be contaminated should be subjected to the rigorous quarantine fixed at ten full days from the date of arrival ; that a difference should be made between the ships on board of which cholera or choleraic diarrhœa has appeared, and those on board of which no choleraic cases have occurred during the passage : in the first case, all the rigorous measures such as isolation and infection should be applied ; in the second case, the ships should not be required to discharge any goods not subject to purification, and should only be subjected to general measures of hygiene without any regular disinfection. 3*rd*, that crowded ships and those on board of which a severe epidemic of cholera has appeared, should be subjected to extraordinary measures, which should consist in complete isolation, in disinfection by means of the most perfect agents, and in the extension and the doubling, according to the nature of the case of the period of quarantine. 4*th*, that the quarantine of those ships whose passage has exceeded fifteen or twenty days, without having had any cases of cholera on board, should be reduced to five days, and to twenty-four hours when it has exceeded thirty days ; in both cases all goods, clothes and parts of the ship capable of retaining cholera should be disinfected, but these ships need not entirely discharge their cargo.

Adopted unanimously, with the exception of Dr. Goodeve who abstained from voting. M. Pelikan voted under reserve with regard to the first conclusion. Minute No. 43, page 7.

With regard to those ships which carry a commissioned medical officer and which have been subjected during the passage to measures of hygiene and of disinfection, the Conference has expressed the following opinion :—Ships under foul bills of health that have fulfilled all the conditions specified in the body of the present article, should be allowed to count the days of the passage as days of quarantine to the extent of nine days. On arriving at a port, they should be subjected to a quarantine of observation so arranged as to complete the regulated quarantine of ten days. As, however, the passages of ships are not all equally long, and as they may vary from one to nine days

and more, the Conference has established the following scale to be followed as a rule in the application of the proposed measures :—

After	24 *hours'*	*passage*	9 *days'*	*quarantine of*	*observation.*	
,,	2 *days*	,,	8	,,	,,	,,
,,	3 ,,	,,	7	,,	,,	,,
,,	4 ,,	,,	6	,,	,,	,,
,,	5 ,,	,,	5	,,	,,	,,
,,	6 ,,	,,	4	,,	,,	,,
,,	7 ,,	,,	3	,,	,,	,,
,,	8 ,,	,,	2	,,	,,	,,
,,	9 ,,	,,	24 *hours*		,,	,,

All ships that have made a passage of over nine days should be subjected to a quarantine of observation of at least twenty-four hours.

Adopted by 12 votes against 9, and 5 who abstained from voting.

Against :—MM. Vetsera, Sotto, Monlau, Kalergi, Maccas, Bosi, Keun, Millingen, and Pelikan.

MM. Dumreicher, Salvatori, de Soveral, Testa and Mühlig abstained from voting. Minute No. 43, page 9.

The Conference is of opinion that the quarantine of observation may be purged on board of the ships, and sometimes the rigorous quarantine, too, in case of stress of weather ; but under all circumstances, the sanitary authorities should be careful to avoid crowding and should keep a strict watch over the health of the persons undergoing quarantine.

Adopted unanimously, with the exception of M. Dumreicher who abstained from voting. M. Dickson voted under reserve. Minute No. 43, pages 9 and 10.

The Conference proposes to establish a quarantine of eight full days for all arrivals by land, with the exception of pilgrims and bodies of troops who should be subjected to a severer quarantine. Let it be understood, however, that if the arrivals come from a focus only two or three days march distant, the quarantine of ten full days should be enforced.

Adopted by 15 votes ; five members abstained from voting, *viz.*, MM. Dumreicher, Goodeve, Dickson, Maccas, and Bosi. Minute No. 43, page 11.

Question of Disinfection.

Conclusions.

According to the opinion of the Conference, disinfection consists in the employment of various agents adapted to render healthy all places and objects contaminated with the choleraic germ. These agents are air, water, fire in certain cases, and likewise the chemical ingredients recommended by science and which have been enumerated in the report on measures of hygiene.

Disinfection is applicable: 1*st*, to ships coming from infected places and on board of which either a severe epidemic of cholera or isolated cases of this malady, or only simple cases of choleraic diarrhœa may have appeared.

2*nd*.—To old clothes and the wearing apparel of persons suffering from cholera and of those undergoing rigorous quarantine either in the lazaretto or on board of the ships.

3*rd*.—To goods supposed to be contaminated, such as drills, rags, hides, leather, feathers and other animal remains; and likewise to wool and other unpacked goods coming from an infected place or from a ship requiring disinfection. Letters and despatches should be enclosed in boxes and should be disinfected by the evolution of chlorine without being opened. As for goods in general, coming from manufactories, and well packed, they are considered as uncontaminated, and, consequently, do not require disinfection.

4*th*.—Lastly, to living animals, by means of airing and by immersion in water, when the sanitary authorities consider it necessary.

Adopted unanimously, with the exception of Dr. Goodeve, who abstained from voting.

MM. Dumreicher, Maccas, Bykow and Millingen voted under certain reserves. Minute No. 43, pages 12 and 13.

Bills of Health and the better adjustment of the Sanitary Code.

Conclusions.

The Conference is of opinion that the name of "suspicious" bill of health should be set aside, and those of "clean" and "foul" bill of health should be kept; the first showing the absence of cholera, and the latter recording its presence and the extent of its ravages.

Adopted unanimously. Minute No. 43, page 14.

The Conference would like to see the word "sporadic" expunged from the bills of health, in which, as the case may be, the existence of Asiatic cholera or of cholera nostras need only be mentioned.

Adopted unanimously. Minute No. 43, page 14.

The Conference is of opinion that the bill of health should make mention of the existence of Asiatic cholera from the very first case attesting to its existence, to the last one marking the end of the epidemic; that the sanitary authorities should not admit to free pratique arrivals from a place where there has been an epidemic till fifteen days after the date of its complete disappearance.

Adopted unanimously. Minute No. 43, page 14.

The Conference thinks that it is absolutely necessary as a guarantee for the public health that a ship should only have one bill of health delivered to it by the sanitary authorities of the port of departure; that it is equally necessary that this bill of health should not be changed till the

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